ACCOUNTANTS' HANDBOOK

L. C. Olsen
% Utah Gas & Coke Co.
Salt Lake City, Ut.

LIST OF SECTIONS

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ACCOUNTANTS' HANDBOOK

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PREFACE

This Handbook gives the accountant what other professions have long possessed—a compendium of fact-material for use in dealing with the thousands of questions that come up in his everyday work.

It brings together and explains formulas, figures, methods, and processes that are constantly needed but cannot be carried in mind for immediate use. Besides refreshing the memory, it gives, for emergencies when special works are not immediately available, the principal points of topics on which information is required. It covers, besides accounting, many other related matters.

The type of accountant who is skilled in accounting technique but neither considers nor understands the other related subjects is happily fast passing away. Accounting technique is the accountant's tool in the use of which he is particularly skilled. But the best results from the use of this tool are obtained only when the accountant avails himself also of all other branches of knowledge bearing on the case in question. The complete and satisfactory handling of an accounting question may involve consideration of quite distinct matters: finance, taxation, organization, management, banking, law, insurance, mathematics, even the physical sciences. It is in connection with the requirement for this broader range of information that the Accountants' Handbook finds its particular field.

Few individuals dealing with accounts, especially those on the staffs of business concerns, have ready access to libraries covering all the topics which they may have occasion to look up. The standard accounting works the practicing accountant will possess, often thoroughly annotated by himself; less frequently, however, will he have books on the related topics. For such information as is contained in these latter works, he will generally have to use a public or institutional library.

There is also a great mass of fact-material, isolated points of information, which is constantly needed but to look up which in the individual volumes of a library involves in the aggregate so much labor that some more convenient method of getting the information is highly desirable.

A handbook is the means for bringing this information to the accountant's elbow, for quick and continuous use. With a good handbook immediately available, the amount of information that can be instantly brought to bear on a question is literally enormous, as a glance at the hundreds of pages of

the present work will show. Moreover, the usefulness of such a book is obviously not limited to accountants but extends to treasurers, controllers, credit men, bankers, engineers interested in financial questions, and business managers. This last class of men constantly makes use of accounting methods in dealing with business problems, though they may have no interest in the technique of recording.

As has been amply demonstrated in the fields of natural science, law, medicine, and engineering, not only does a handbook greatly multiply the amount of quickly available information, but since the facts, tables, and formulas it contains have been carefully checked, it minimizes the probability of error and is far more dependable than relying on memory, attempting to reason out from fundamentals, or unskilfully applying unfamiliar methods.

To summarize the scope of this Handbook—what it includes, and what it does not include:

> It cannot give everything the accountant may have occasion to use, but it can and does give the material that is most often used.
>
> It is not intended to teach principles, as does a textbook or a treatise, but simply to refresh the memory on principles vague through infrequent use, to give in emergencies a rapid and essentially correct grasp of unfamiliar principles.
>
> It is not intended to replace special textbooks and treatises, but simply to give, when an extensive reference library is not available, a very much wider range of information than is found in any other one book.
>
> It gives facts, tables, formulas, processes, charts which, although useful, no one would attempt to carry constantly in mind.
>
> Finally, through careful selection, arrangement, and indexing of the material it saves its user an immense amount of labor; and it greatly reduces the probability of error.

The Accountants' Handbook is essentially a compilation. While there is no inconsiderable amount of original matter strewn throughout the work, the bulk of the material has been taken from a wide range of sources, credit in every case being freely given. Certain sections of the work have been prepared by specialists, carefully chosen for their ability, experience, and knowledge of the topics covered.

In the selection and arrangement of material, many individuals have been consulted, so that the work represents the collective judgment of many authorities as to what is desirable in a book of this kind and how it is best presented. A certain amount of repetition has been purposely permitted for greater convenience of use. A special effort has been made to have the index comprehensive and accurate.

The typographical arrangement is the outcome of much thought and experience, as the example of the excellent engineering handbooks now in print has been frankly followed. The engineering profession is unquestionably deserving of great credit in connection with the development of this invaluable type of reference work.

It is quite possible that the experience of users may lead to the detection of minor errors or disclose the desirability of further developments in the structure or content of this Handbook. Any suggestions in this regard will be appreciated by the publishers.

In conclusion, acknowledgment is due to those who by their co-operation have made possible the publication of the Handbook with least delay and greatest accuracy and completeness. The contributors, whose names are listed elsewhere, have endeavored to make the book a working organism rather than a mere collection of uncorrelated data. The editorial staff of the Ronald Press Company have brought to the work the experience of years in the preparation of many of the standard works dealing with the topics covered. John T. Madden, C. P. A., Professor of Accounting and Assistant Dean, School of Commerce, Accounting and Finance of New York University, has read much of the manuscript from the point of view of technical accuracy. R. B. Kester, C. P. A., Professor of Accounting in Columbia University; B. F. Young, Assistant Chief Accountant of the New York Telephone Company; Thomas Conyngton of the New York Bar; H. S. Kirby, Auditor of the Irving Bank–Columbia Trust Company; S. F. Brewster, of the Federal Bar; F. P. Pitzer of the Equitable Life Assurance Society of the United States; Edward B. Millar, C. P. A.; and Wallace Clark, Consulting Industrial Engineer, have assisted with suggestions and criticisms.

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SECTION 1

BUSINESS LAW

CONTENTS

SECTION 1

BUSINESS LAW

Foreword

The object of this section is to present a digest of the fundamental principles of law on those subjects which are most likely to be met with by accountants and business men. Only the more important phases of the various subjects are set forth as complete as may be necessary to present principles for ready reference; no effort has been made to treat subjects exhaustively or to make the distinctions of the various phases of law developed by court decisions. Such a work would be of interest to lawyers and law students but would be out of place in a handbook.

In treating the subjects general principles were formulated from court decisions. Wherever possible the language of the court is used, or digests where the decisions are lengthy. For those who desire to make further and more detailed inquiry on any point, authorities and cases are cited in many instances. For more complete selection of cases and more comprehensive treatment of the subjects, readers can secure adequate information in the well-known legal reporting agencies such as Corpus Juris, Cyc., Century and Decennial Digests, as well as the many state digests and reports.

The subjects are divided into a major and a minor classification, the former consisting of Contracts, Corporations, Negotiable Instruments, and Partnerships; the latter, treated in more limited scope, of Agency, Bailments, Insurance, Sales, and Suretyship and Guaranty.

Law of Contracts

DEFINITION.—A contract is "an agreement upon sufficient consideration to do or not to do a particular thing." (2 Blackstone Commentaries, p. 442.) A more complete definition is: "A bargain or agreement voluntarily made upon good consideration, between two or more persons capable of contracting to do, or forbear to do some lawful act." (*Justice* v. *Lang*, 42 N. Y. 493.)

CLASSIFICATION.—There are various classifications of contracts, such as:

1. Express and implied contracts
2. Executed and executory contracts
3. Contracts of record
4. Specialties or contracts under seal
5. Void, voidable, and valid contracts

Express Contracts.—"A contract is express when the agreement is formal, and stated either verbally or in writing." (*Gillan* v. *O'Leary*, 124 App. Div. [N. Y.] 498.)

Contracts Implied in Fact.—"A contract may be implied where an agree-

ment in fact is presumed from the acts of the parties and this is the proper meaning of an implied contract." (*People* v. *Dummer*, 274 Ill. 637; also *People* v. *Speir*, 77 N. Y. 144; *Baker* v. *Stoutmeyer*, 2 McG. [La.] 61.)

Contracts Implied in Law.—Generally called **constructive** or **quasi-contracts.** "Constructive contracts, which are fictions of law adopted to enforce legal duties by actions of contract, where no proper contract exists, express or implied." (*Hertzog* v. *Hertzog*, 29 Pa. 465.) "The term implied contract has also been applied to a class of obligations which are created by law without the assent of the party upon whom the obligation is imposed, on the ground that they are dictated by reason and justice. They are not contract obligations in the true sense because there is no agreement of the parties, but they are constructive contracts created by law." (*People* v. *Dummer*, 274 Ill. 737; also *Navada Co.* v. *Farnsworth*, 89 Fed. 164; *Gutta Percha etc. Mfg. Co.* v. *Houston*, 108 N. Y. 276.)

Executed Contracts.—"One in which the object of the contract is performed." (*Fletcher* v. *Peck*, 6 Cranch [U. S.] 87.)

Executory Contracts.—"A contract to do some future act." (*Hale* v. *Sharpe*, 6 Caldw. [Tenn.] 275.) "Whilst any act remains to be done the contract is understood to be executory." (*Farrington* v. *Tennessee*, 95 U. S 679; also *Fox* v. *Kitton*, 19 Ill. 519; *Justice* v. *Lang*, 42 N. Y. 493.)

Contracts of Record.—These are judgments and recognizances. "A judgment is a contract of the highest nature known to the law." (*Taylor* v. *Root*, 4 Keyes [N. Y.] 344.) A recognizance is an obligation entered into before a court of record, undertaking to do or not to do a certain thing. Generally referred to as a bond to keep the peace, appear as a witness, pay a debt, etc.

Specialties or Contracts under Seal.—Contracts under seal derive their legal effect from the formality of the instrument, the essential elements of which are the seal and delivery. (Leake Digest, pp. 134–146.) Under the common law consideration was not necessary in sealed contracts, but most of the states have adopted statutes to the effect that a seal is only presumptive evidence of a consideration (*Home Ins. Co.* v. *Watson*, 59 N. Y. 390) which may be rebutted. "In contracts made by deed under seal, a consideration is not essential to give validity to the promise, as it is in the case of simple contracts." (Leake Digest, pp. 134–146.)

Parol or Simple Contracts.—These include all contracts in writing not under seal nor of record, and also all oral contracts.

Void Contracts.—An agreement in which one of the four necessary elements of a contract is absent, has no legal effect, and is not binding on either party. In reality it is no contract at all. The expression "void contract," although used, is a misuse of terms.

Voidable Contracts.—A contract which is binding on one of the parties but is capable of being rejected or accepted at the will of the other.

Valid Contracts.—One binding on the parties and of full legal effect.

ESSENTIAL REQUIREMENTS.—The following essential requirements are necessary to make a contract enforcible at law:

1. Parties legally competent
2. Agreement
3. Sufficient consideration
4. Legality of object or subject matter

1. PARTIES.—All persons are competent to enter upon enforcible contracts except those partially or totally disqualified under the law.

TOTAL DISQUALIFICATION.—One legally declared incompetent by a court having jurisdiction and where a guardian is appointed to administer his affairs, has no power to make an enforcible contract in the state in which he was judicially declared incompetent. Such persons include insane persons and spendthrifts.

PARTIALLY DISQUALIFIED—MINORS.—At common law and in most states by statute, an infant is a person under 21 years of age. Contracts of an infant may be valid or voidable at his option.

Valid contracts are for necessities furnished in accordance with station in life. One is liable for such at their reasonable value, not at the agreed price. Strictly speaking, the liability is on *quantum meruit*, i.e., quasi-contract and not on contract. The items must fall under the classification of necessities required for physical, mental, or spiritual welfare, such as food, clothing, medical attendance, shelter, ordinary education, but does not include articles of pleasure, ornament, or luxury.

Voidable Contracts.—Contracts of an infant, exclusive of those for necessities, are voidable at his option during his infancy, and on becoming of age he may avoid or ratify them.

Disaffirmance of Contract.—This may be done by an infant at any time but must be completed within a reasonable time after he becomes of age, except that deeds to land cannot be disaffirmed until he reaches his majority.

Return of Value Received.—The courts of the various states are in conflict on this subject. Some courts hold that an infant, although he has received the benefits under an executed contract, may recover from the other party what he has paid even though he cannot return what he has received. (*MacGreal* v. *Taylor*, 167 U. S. 688; *Reynolds* v. *McCurry*, 100 Ill. 356, *Gillis* v. *Goodwin*, 180 Mass. 140.) This rule is followed in New York. Other jurisdictions hold that an infant who has received a benefit under an executed contract cannot recover the consideration on repudiation by him without returning what he received. (*Johnson* v. *Ins. Co.*, 56 Minn. 365.)

Personal Defense.—Infancy is a personal defense available to the infant only and cannot be pleaded by the other party to the contract.

Torts.—Infants are liable for their torts, i.e., wrongs such as frauds, trespass, etc.

Minor's Representation of Full Age.—A minor who, fraudulently representing himself or leading others to think him of full age, enters upon a contract, will be held liable in a court of equity on his contract. The other party on discovery of the fraud may rescind and recover from the infant what he has parted with. The liability of the infant is for his fraud (*Studwell* v. *Shapter*, 54 N. Y. 249; *Burnett* v. *Williams*, 30 Fed. Rep. 697) and not on contract (*Badger* v. *Phinney*, 15 Mass. 359).

INSANE PERSONS.—

Legally Declared.—Contracts of a person judicially declared insane and placed under a guardian are absolutely void.

Not Legally Declared.—The general rule is that the law presumes every person sane until the contrary is established; hence a contract of a person of unsound mind is voidable only on establishing his insanity. The burden of proof is upon the person alleging insanity.

Degree of Insanity.—An insane person's contract is voidable where his infirmity is such as to render him incapable of understanding the nature of the contract and its probable consequence. (*Perry* v. *Pearson*, 135 Ill. 218; *Brown* v. *Brown*, 108 Mass. 386.) It need not be entire want of reason or

permanent insanity; yet it must be something more than mere weakness of intellect. (*Guild* v. *Hull*, 127 Ill. 523.)

Executed Contracts.—The rule followed by most states is that an executed contract of an insane person is not voidable. These courts follow the leading English case of *Moton* v. *Camroux*, 2 Exch. 489, which states: "The modern cases show that when that state of mind was unknown to the other party, and no advantage was taken of the lunatic the defense cannot prevail, especially where the contract is not merely executory, but executed in whole or in part, and the parties cannot be restored to their original positions." Followed in: *Mutual Life Ins. Co.* v. *Hunt*, 79 N. Y. 541; *Burnham* v. *Kidwell*, 113 Ill. 425. Contra principle followed in: *Seaver* v. *Phelps*, 11 Pick. 304; *Rogers* v. *Blackwell*, 49 Mich. 192.

ALIENS.—In practically all the states aliens have the same rights as subjects to make and enforce contracts regarding personal property. In a few states restrictions are imposed in regard to real estate.

Alien Enemies.—An alien enemy cannot make a new contract or enforce existing contracts during the continuance of hostilities. Existing contracts are as a rule suspended during hostilities. (*U. S.* v. *Grossmayer*, 9 Wall. 72.)

MARRIED WOMEN.—In most states married women have full rights to enter into enforcible contracts. A few states, however, still retain restrictions more or less approaching the old common law rule that married women cannot make a valid contract.

CORPORATIONS.—Corporations have full authority to enter into contracts within their express or implied corporate powers.

Ultra Vires Contracts.—An executory contract beyond its corporate powers is said to be *ultra vires* and is void. A corporation, however, is liable on its *ultra vires* contracts where it has accepted benefits under the contract. (See "Law of Corporations.")

2. **AGREEMENT.**—Agreement or mutual assent, which is the result of an offer and acceptance, is necessary for every contract. "Mutual assent is assent to the same thing in the same sense and under a common understanding of the stipulations agreed to." (*Martin* v. *Thrower*, 3 Ga. A. 784; also *Fire Ins. Assn.* v. *Wickham*, 141 U. S. 564; *Harper* v. *Goldschmitt*, 156 Cal. 245; *Harlow* v. *Curtis*, 121 Mass. 320; *Emerson* v. *Pacific Coast etc. Packing Co.*, 96 Minn. 1; *Livingston* v. *Livingston*, 173 N. Y. 377; *Teesdale* v. *Bennett*, 123 Wis. 355.)

OFFER.—Must be made with intent to create a contract on acceptance and be certain and free from ambiguity. The extent of the obligation is governed by the terms of the offer, for an acceptance is required to be identical with the offer made. "Where an offer and acceptance are relied on to make a contract, the offer must be one which is intended of itself to create legal relations on acceptance, and the offer intended to create legal relations must be so complete that on acceptance an agreement containing all the necessary terms is found." (13 C. J. Contracts 268; *Elks* v. *North State L. Ins. Co.*, 159 N. C. 619; also *Woods* v. *Evans*, 113 Ill. 186; *Marble* v. *Standard Oil Co.*, 169 Mass. 553; *Canet* v. *Smith*, 173 App. Div. [N. Y.] 29; *Wolfram* v. *Schwepke* 123 Wis. 19.)

Offer Must be Communicated.—An offer must be communicated by word or conduct. The mode or manner is immaterial. (*The Palo Alto*, 18 Fed. Cases 10,700; *College Mill Co.* v. *Fidler*, 58 S. W. [Tenn.] 382.)

Revocation of Offer.—An offer may be withdrawn any time before it is accepted or the acceptance put in course of communication. (*Moffet* v. *Rochester*, 178 U. S. 373; *Martin* v. *Hudson*, 81 Cal. 42; *Corbett* v. *Cronkhite*, 239 Ill. 9; *Benton* v. *Springfield Y. M. C. A.*, 170 Mass. 534.) Where time for acceptance is given, it may still be withdrawn before the expiration of that time unless the agreement to hold it open for that time is supported by a separate consideration. (*Minneapolis etc. R. Co.* v. *Columbia Rolling Mills Co.*, 119 U. S. 149; *Schenectady Stove Co.* v. *Holbrook*, 101 N. Y. 45.)

Lapse of Offer.—An offer lapses so that subsequent acceptance will have no effect by

1. Expiration of the time for acceptance.
2. Expiration of a reasonable length of time where no time is specified.
3. Death or insanity of the parties before acceptance.
4. Dissolution of partnership before acceptance where one of the parties is a partnership.

ACCEPTANCE.—A contract results from the acceptance of an offer. "To accept a contract is to admit it and agree to it; to accede to it; to assent to it; the ordinary meaning embodies assent and agreement." (*State* v. *Columbus Public Service Board*, 81 Oh. 218; also *Laprade* v. *Fitchburg etc. R. Co.*, 205 Mass. 77; *Graff* v. *Buchanan*, 46 Minn. 24; *Chicago etc. R. Co.* v. *Dane*, 43 N. Y. 240; *Hall* v. *Wilson*, 6 Wis. 433.)

Who May Accept.—An offer can be accepted only by the person to whom it is made and is not transferable to another.

Public Offers.—Public offers of rewards, etc., from their nature cannot be made to a definite person and cannot become binding contracts until accepted, within the scope of the offer by some person. (*Schoestene* v. *Iselin*, 69 Hun 250; *Crowell* v. *Hopkinson*, 45 N. H. 9.)

Sufficiency of Acceptance.—"An acceptance must correspond to the offer at every point, and must conclude the agreement." (*U. S.* v. *P. J. Carlin Const. Co.*, 224 Fed. 859.) "An acceptance, to be good, must, of course, be such as to conclude an agreement or contract between the parties. And to do this, it must in every respect meet and correspond with the offer, neither falling within nor going beyond the terms proposed, but exactly meeting them at all points and closing with them just as they stand." (*Potts* v. *Whitehead*, 23 N. J. Eq. 512; also *Kincaid* v. *Eaton*, 98 Mass. 139; *Poel* v. *Brunswick-Balke-Collender Co.*, 216 N. Y. 310; *Baker* v. *Holt*, 56 Wis. 100.)

Communication of Acceptance.—An acceptance to consummate a contract must be communicated to the offeror or must be put in the course of communication by the acceptor. (*Cleveland etc. R. Co.* v. *Shea*, 174 Ind. 303; *Busher* v. *N. Y. Life Ins. Co.*, 72 N. H. 551.)

Revocation of Acceptance.—An acceptance can be revoked only by a communication to that effect before the acceptance is consummated. (*Commercial Ins. Co.* v. *Hallock*, 2 N. J. L. 645.)

OFFER AND ACCEPTANCE—METHODS OF COMMUNICATION.—An acceptance becomes an enforcible contract from the moment it is put in the same course of communication followed by the offerer. The fact that the offerer fails to receive the acceptance so communicated has no effect. If, however, a different mode of communication is followed by the acceptor, his acceptance does not become a binding contract until it is received by the offerer.

Mail and Telegraph.—An offer sent by mail or telegraph is of no effect until it reaches the offeree. The acceptance of the offer becomes a contract only

when it is mailed, i.e., a properly addressed letter of acceptance with sufficient postage put in a United States post box or a prepaid telegram is given to the Telegraph Company. Failure of the offerer to receive such notification of acceptance does not affect the binding force of the contract.

3. CONSIDERATION.—"Something of value received by one party or parted with by the other by reason of the contract." (*Grantt* v. *Isett*, 81 Kans. 246.) "That may be some right, interest, profit or benefit accruing to one party, or some forbearance, detriment, loss or responsibility given, suffered or undertaken by the other." (*Ft. Wayne etc. Tract. Co.* v. *Justus*, 108 N. E. [Ind.] 754.) "Consideration may be described generally as some matter accepted or agreed for as a return or equivalent for the promise made, showing that the promise is not made gratuitously." (*Donahue* v. *Rich*, 2 Ind. A. 540.)

NECESSITY OF CONSIDERATION.—A consideration is essential to the validity of every contract. (*National Elect. Sig. Co.* v. *Fessenden*, 207 Fed. 915; *Hendy* v. *Kier*, 59 Cal. 138; *Bonney* v. *Bonney*, 237 Ill. 452; *Chase* v. *Chase*, 191 Mass. 556; *Fipe* v. *Blake*, 38 Minn. 426; *Belknap* v. *Bender*, 75 N. Y. 446.)

WHAT CONSTITUTES CONSIDERATION.—As a general rule, in accordance with the definition given above, there is sufficient consideration for a promise if there is any benefit to one party or any loss or detriment to the other. If something valuable flows from the person to whom a promise is made or if he suffers some loss or inconvenience and the promise is the inducement to the transaction, there is said to be a consideration. (*Townsley* v. *Summerall*, 2 Pet. 170; *Masson* v. *Morton Bldg. Co.*, 28 Cal. A. 330; *Buchanan* v. *International Bank*, 78 Ill. 500; *Chapin* v. *Lapham*, 20 Pick 467; *White* v. *Baxter*, 71 N. Y. 454; *Pabst Brewing Co.* v. *Milwaukee*, 126 Wis. 110.)

GOOD AND VALUABLE CONSIDERATION DISTINGUISHED.—A **good consideration** is love or natural affection by reason of the relation of the parties by blood, marriage, or family. A **valuable consideration** is a benefit or a detriment as set forth in the definition of consideration.

MUTUAL PROMISES.—Mutual promises concurrently made are considerations for one another. The one promise, and not performance, constitutes the consideration for the other. (*A. B. Dick Co.* v. *Fuller*, 213 Fed. 98; *Morrill* v. *Colehour*, 82 Ill. 618; *Price* v. *Muriat*, 107 Mass. 49; *Bayne* v. *Greiner Est.* 118 Minn. 350.)

MUTUALITY OF OBLIGATION IS ESSENTIAL.—"A contract is mutual where the agreement entered into between the parties is binding on each alike touching its ultimate performance." (13 C. J. Contracts 321; *Baumhoff* v. *Oklahoma City Elec. etc. Co.*, 14 Okl. 127; also *Harper* v. *Goldschmitt*, 156 Cal. 245; *Corbett* v. *Cronkhite*, 239 Ill. 9; *Abbott* v. *Hapgood*, 150 Mass. 248; *Grossman* v. *Schenker*, 206 N. Y. 466.)

LEGAL LIABILITY.—The promise, to constitute a good consideration for a promise, must impose some legal liability on the person making it. A promise to do what the promisor is legally bound to do is not a consideration. The promise must be lawful, definite, and certain.

WAIVER OF A LEGAL RIGHT.—The relinquishment of a legal right is a sufficient consideration. (*In re All Star Feature Corp.*, 232 Fed. 1004; *Hanchett* v. *Ives*, 171 Ill. 122; *Hamer* v. *Sidney*, 124 N. Y. 538.) A promise to refrain from doing something which the promisor has no legal right to do, is not a consideration for a promise. (*Sheppey* v. *Stevens*, 177 Fed. 484

Crosby v. *Ward*, 6 N. Y. 369; *Everingham* v. *Meighan*, 55 Wis. 354.) The relinquishment of rights may be those under contract generally, the right to sue for damages, claims of a beneficiary in an estate, dower, courtesy, liens, etc. As a general rule a promise to perform an existing legal obligation is not a valid consideration. (*Harris* v. *Cassidy*, 107 Ind. 158; *Parrott* v. *Mexican Cent. R. R. Co.*, 207 Mass. 184; *Carpenter* v. *Taylor*, 164 N. Y. 171.)

PAST CONSIDERATION.—A past consideration will not support a promise except where the past consideration was based on a previous request. (*Moore* v. *Elmer*, 180 Mass. 15; *Aultman* v. *Kennedy*, 33 Minn. 339; *Arend* v. *Smith*, 151 N. Y. 502.)

4. SUBJECT MATTER.—The subject matter or object of a contract is that which the agreement is about and may be anything concerning the affairs of mankind not forbidden by law or in derogation to human welfare.

MUST BE LAWFUL.—Unlawful agreements are those in violation of positive law and those which, although not contravening the law, are against the welfare of mankind and are not enforcible on the ground of public policy.

IN VIOLATION OF THE POSITIVE LAW.—If the object of an agreement is illegal, a contract does not result. (*U. S. Bank* v. *Owens*, 2 Pet. 527; *Harvey* v. *Merrill*, 150 Mass. 1; *Debbit* v. *Lander*, 72 Wis. 120.) Agreements to violate the law are illegal. (*U. S.* v. *Trans Missouri Freight Assn.*, 166 U. S. 290; *Coat* v. *Phillip*, 56 N. Y. 31.)

FRAUD AGAINST THIRD PERSONS.—An agreement to commit a fraud against a third person (*Douglas State Bank* v. *Lewinson*, 192 Ill. A. 364; *Sprague* v. *Webb*, 168 App. Div. 292), or the public in general (*Clinch* v. *Proctor*, 66 Fed. 240; *Nickerson* v. *English*, 142 Mass. 267; *Matesne* v. *Horwitz*, 101 N. Y. 469), or the commission of a civil wrong (*Randal* v. *Howard*, 2 Black. 585; *Adams* v. *Outhouse*, 45 N. Y. 318; *Rice* v. *Wood*, 113 Mass. 133) against a third person, is illegal and void even though the wrong itself may not be a crime or an indictable offense.

AGREEMENTS AGAINST PUBLIC POLICY.—Agreements opposed to public policy are illegal and void. (*Teal* v. *Walker*, 111 U. S. 242; *Palmbaum* v. *Magulsky*, 217 Mass. 306; *Richardson* v. *Crandall*, 48 N. Y. 348; *Roch* v. *Ekern*, 162 Wis. 291.)

Public Policy Defined.—"The term 'public policy' as applied to contracts embraces all acts or contracts which tend clearly to injure the public health, the public morals, or confidence in the purity of the administration of the law, or to undermine that sense of security for individual rights, whether of personal liberty or private property which every citizen has a right to feel." (13 C. J. Contracts 425; *Holland* v. *Sheehan*, 108 Minn. 362.)

Test of Public Policy.—The test of public policy is the evil tendency of a contract rather than the actual injury. Just what public policy is in a given jurisdiction is for the courts to decide, as it varies with time and place.

General classification of agreements against public policy:

Against good morals such as,

1. Agreements of an immoral nature.
2. Gambling and wagering transactions.
3. Agreements to commit a fraud, breach of trust or confidence.

Against marital relations

1. Absolute restraint of marriage.
2. In derogation of the marital relation.

Against public service

1. Interfering with legislative actions.
2. Influencing by corrupt means operations of a political subdivision of the nation.
3. Traffic in public office.
4. Influencing courts of justice by corrupt means.

Unreasonable restraint of trade.—Agreements to prevent competition, increase prices, or create monopolies.

Agreements in Restraint of Trade.—Agreements in unreasonable restraint of trade are illegal (*Addyston Pipe etc. Co.*, 85 Fed. 271), but agreements in reasonable restraint of trade are valid (*Carter* v. *Alling*, 43 Fed. 208). Modern authorities gauge the validity of contracts on the reasonableness of the restraint imposed as necessary to protect the parties in whose favor it was imposed. Leading cases are: *Gibbs* v. *Consolidated Gas Co.*, 130 U. S. 369; *Diamond Match Co.* v. *Roeber*, 106 N. Y. 473.

FORM OF CONTRACT.—

Oral.—Parol or simple contracts, except where required by statute to be written, may be made by word of mouth and are enforcible as such except for the difficulty of proving the contract.

Written.—In practically all of the states certain parol contracts must be in writing and sometimes follow prescribed forms. The foundation of most of the state laws in this respect is the Statute of Frauds mentioned hereinafter. Aside from the contracts under that statute there are a number of others not so general which must be in writing, such as insurance contracts which under the common law could be oral and are now generally required to be in writing and in some states in statutory form; contracts for the recovery of debt barred by the statute of limitations; promise of an infant on becoming of age to pay for debts contracted during minority; assignments of patents and copyrights.

Statute of Frauds.—To prevent frauds and perjury in proving contracts, most states have adopted statutes modeled after the English Statute of Frauds enacted in 1676 during the reign of Charles II. These statutes require that certain contracts shall be proven by some memorandum in writing.

Contracts Required to be in Writing.—Under the statute the following contracts to be enforcible must be in writing and signed by the person to be charged:

1. Promises or contracts of executors and administrators to pay out of their personal estate debts due from the estate they are administering.

2. Contracts not to be performed within one year from the making thereof. This refers to contracts which cannot be completed within the year. The statute does not apply to contracts which may be performed within a year but may possibly extend beyond the year. The general interpretation of the rule to bring contracts under the statute is that it must appear by their terms that performance cannot be completed within a year from the time the contract is made.

3. Promises to answer for the debt, default or miscarriage of another. This refers to suretyship and guaranty. The promise must be made to the creditor and there must be a present and prospective liability. To be within the statute the liability of the original debtor must continue and the promisor's liability become collateral. A release of the original debtor is a novation and takes it out of the statute, hence it need not be in writing.

4. Promises made in consideration of marriage, except mutual promises. This refers to promises to pay money, transfer property, make a marriage settlement or other act in consideration of a marriage taking place, but does not refer to the promise to marry. (*Lloyd* v. *Fulton*, 91 U. S. 479.)

5. A promise to pay a debt discharged in bankruptcy.

6. A contract for the sale of personal property over a fixed amount, which varies in the different states. (Explained more fully under "Sales.")

7. A contract for the sale of lands, tenements and hereditaments or any interest in them. This refers to the contract to sell and not the deed conveying title, which must be in writing and generally sealed. The natural growth and product of land are an interest in land, and contracts to sell or buy such must be in writing. Crops or other products of the land raised by cultivation and labor are not an interest in land and their sale need not be in writing. A lease or rental agreement for more than one year must be in writing. An easement (*Mumford* v. *Whitney*, 15 Wend. [N. Y.] 380) and right of way (*Bonelli* v. *Blackmore*, 66 Miss. 136) are interest in land and must be in writing.

EFFECT OF CONTRACT—REALITY OF CONSENT.—As stated, one of the requisites of a valid contract is agreement. This is not obtained without real consent of both parties, which cannot be said to exist where there is mistake, fraud, duress, undue influence, or misrepresentation.

MISTAKE.—Is occasioned by a misconception of some matter and may be a mistake of fact or a mistake of law.

Mistake of Fact Defined.—Mistake of fact is a mistake not caused by the neglect of a legal duty on the part of the person making the mistake and consisting in:

1. An unconscious ignorance or forgetfulness of a fact, past or present, material to the contract, or
2. Belief in the present existence of a thing material to the contract, which does not exist, or in the past existence of such a thing, which has not existed. (South Dakota Civil Code No. 1206.)

Mistake Affecting Validity.—"Mistake does not of itself affect the validity of contracts at all. But the mistake may be such as to prevent any real agreement being formed in which case the contract is absolutely void both at law and in equity." (*Kyle* v. *Kavanaugh*, 103 Mass. 356.)

Mistake as to Parties—Subject Matter.—A mutual mistake as to the subject matter, that is, what the contract is about or what is to be done under the contract, or the identity of the persons with whom the contract was made, avoids the contract as there is no meeting of the minds.

As to Legal Effect and Value of Subject Matter.—A mistake regarding the legal effect or the value of the subject matter does not affect the validity of a contract.

Mistake of One of the Parties.—A mistake of one of the parties only and not known to the other, does not affect a valid contract. (*Ellicott Mach. Co.* v. *U. S.*, 44 Ct. Cl. 127; *Monks* v. *West Street Imp. Co.*, 149 App. Div. [N. Y.] 504; *Bostwick* v. *Mutual Ins. Co.*, 116 Wis. 392.)

Mistake—Mutual Mistake.—One of material facts will avoid the agreement. (*Allen* v. *Hammond*, 11 Pet. 63; *Flynn* v. *Smith*, 111 App Div. [N. Y.] 870; *Hoops* v. *Fitzgerald*, 204 Ill. 325.) "Mutual mistake consists of a clear showing of a misunderstanding, reciprocal and common to both

parties, in respect to the terms and subject matter of the contract, or some substantial part thereof." (13 C. J. Contracts 375; *C. H. Young Co.* v. *Springer*, 113 Minn. 382.)

Mistake of Law.—This does not avoid the contract. The rule is well established that a mistake of law or the legal effect of a contract will not affect the enforcibility of the agreement. (*Lamborn* v. *Dickinson County*, 97 U. S. 181; *Soley* v. *Jones*, 208 Mass. 561.) Mistake as to the law of other states is regarded as mistake of fact and may under certain circumstances avoid the contract.

Mistake of Fact—Remedies.—Remedies are both equitable and legal where contracts are entered under mistake of fact. **In equity,** where specific performance is prayed for, the defense of mistake may be interposed or a bill may be filed to have the contract declared void. In case of mistake of form or expression, the instrument may be reformed in accordance with the real intent of the parties.

At Law.—The contract may be repudiated and all values paid thereunder recovered.

WRITTEN CONTRACTS—CONTENTS UNREAD AND UNKNOWN.—The general rule is that a person cannot avoid his written contract on the ground that he did not know its contents, did not read it, or that he supposed it was different in its terms or mere form. (*Black* v. *Wabash etc. R. Co.*, 111 Ill. 351; *Wood* v. *Mass. Mutual Acc. Assn.*, 174 Mass. 217; *Peo* v. *Dunbar Contracting Co.*, 215 N. Y. 416.) "It will not do for a man to enter into a contract; and, when called upon to respond to its obligations, to say that he did not read it when he signed it, or did not know what it contained. If this were permitted, contracts would not be worth the paper on which they were written. But such is not the law. A contractor must stand by the words of his contract, and, if he will not read what he signs, he alone is responsible for his omission." (*Upton* v. *Tribilcock*, 91 U. S. 45.)

EXPRESSED INTENTIONS ARE BINDING.—A person is bound on his contracts in accordance with the reasonable meaning of his expressed intention regardless of what his secret intentions were. "The rule of law is stated in *Freeman* v. *Cooke*, 2 Exchange 654. . . . . If, whatever a man's real intention may be, he so conducts himself that a reasonable man would believe that he was assenting to the terms proposed by the other party, and the other party upon that belief enters into the contract with him, the man thus conducting himself would be equally bound as if he had intended to agree to the other party's terms." (*Smith* v. *Hughes*, L. R. 2 Q. B. 597; also *Dybarg* v. *Minneapolis Sanitarium*, 128 Minn. 292.)

FRAUD.—Fraud is a false statement of a material fact made with knowledge of its falsehood or reckless disregard as to whether it is true or false, with the intention that it shall be acted upon by another and which is relied and acted upon by the other party to his injury.

Remedies of Defrauded Party.—The party so deceived in entering upon a contract, upon discovery of the deception can avoid the contract or maintain an action for the damages he sustained. (*Cooper* v. *Schlesinger*, 111 U. S. 148; *Krankowski* v. *Knapp*, 268 Ill. 183; *Adams* v. *Gillig*, 199 N. Y. 314; *Lee* v. *Burnham*, 82 Wis. 209.)

Must Be a Statement or Representation.—Mere non-disclosure does not constitute fraud unless there is a duty to disclose all facts to the other party or unless active steps are taken to conceal the truth.

Opinion.—Mere expression of opinion, although erroneous, is not fraud.

(*John* v. *Stephenson*, 154 U. S. 625; *Bryant* v. *Ocean Ins. Co.*, 22 Pick. 200; *Swanson* v. *Fisher*, 148 Ill. A. 104.)

Expectation of Future Act.—An expectation, representation, or promise as to some future act or performance which may have brought about the agreement, will not constitute fraud where the expectation is not realized. (*Southern Dev. Co.* v. *Silver*, 125 U. S. 247; *Miller* v. *Sutliff*, 241 Ill. 521; *Dave* v. *Morris*, 149 Mass. 188; *Adams* v. *Gillig*, 199 N. Y. 314.)

Representation of Law.—An erroneous representation of law is not fraud. (*Brink* v. *Johnson*, 146 Fed. 209; *Hooker* v. *Midland Steel Co.*, 215 Ill. 444; *Gormely* v. *South Side Gym. Assn.*, 55 Wis. 350.)

Trade Talk.—Commendable expressions as to value appearance, quality, prospects, etc., are not sufficient to constitute fraud.

Effect of Fraud.—An agreement procured by fraud is voidable, but not void. The defrauded party has the right to elect whether he will treat the contract as binding or refuse to be bound by it. (*Foreman* v. *Bigelow*, 9 F. Case No. 4934, 4 Cliff 508; *Wallace* v. *Pierce*, 97 Mass. 46; *Elmer* v. *Loper*, 66 N. J. L. 50; *Adams* v. *Gillig*, 199 N. Y. 314.)

Remedies of Party Defrauded.—He may either:

1. Affirm the contract, keeping what he has under it and sue for the damages he sustained by reason of the fraud. The affirmance of the contract is not a waiver of the fraud and does not bar the right to recover damages (*Hecksher* v. *Edenborn*, 203 N. Y. 210; *Gibson* v. *Nelson*, 111 Minn. 183; *Bumbs* v. *Burns*, 137 Fed. 781); or,
2. Rescind the contract and sue to recover what he has parted with. To rescind the contract he must return the consideration he received. If he retains the benefits under the contract his right to rescind is gone.

DURESS.—Duress is a threatened or actual violence or imprisonment reasonably sufficient to cause such apprehension that a person will enter into a contract against his own free will. "Duress exists where one is induced, by another's unlawful act, to make a contract or perform some act under circumstances which prevent his exercising his free will." (*Hackley* v. *Headley*, 45 Mich. 569.) "Duress is a species of fraud in which compulsion in some form takes the place of deception in accomplishing the injury." (*Kans* v. *Gracey*, 162 Iowa 671.)

Effect of Duress.—A contract entered into by a person under duress is voidable at his option, but not void. As in fraud, the contract may be disaffirmed or ratified.

Remedies.—"One who by duress is compelled to sign a contract whereby he parts with his property may proceed in equity for a recession, may rescind by his own act and sue at law, or may allow the contract to stand and sue for damages." (*Neibuhr* v. *Gage*, 99 Minn. 149.) "Unlawful duress is a good defense to a contract if it includes such degree of constraint or danger, either actually inflicted or threatened and impending, as is sufficient in severity or apprehension to overcome the mind and will of a person of ordinary firmness." (*U. S.* v. *Huckabee*, 16 Wall. [U. S.] 414.)

UNDUE INFLUENCE.—"Undue influence is a kind of mental coercion, which destroys the free agency of one and constrains him to do that which is against his will and what he would not have done if left to his own judgment and volition, so that his act becomes the act of the one exerting the influence rather than his own act, such act being one to his own injury, or to the injury of some one upon whom he would if left to his own free will, have bestowed a benefit." (*Beard* v. *Beard*, 173 Ky. 131.)

What it Consists of.—"Undue influence . . . consists in acts which though not fraudulent, amount to an abuse of the power which circumstances have given to the will of one individual over that of another." (Holland Jur., p. 264.) Undue influence is a form of fraud and consists of taking unfair advantage of another's weakness of mind, necessities, and distress, or by reason of the confidential relations or family relations existing between the parties.

Effect of Undue Influence.—A contract entered into under undue influence is voidable at the option of the injured party. To affect a contract on the ground of undue influence it must be shown to be such an influence as the law condemns. (*Bowdoin College* v. *Merritt*, 75 Fed. 480; *Roberts* v. *Little*, 9 Misc. 497; *Batavia Bank* v. *North*, 114 Wis. 637.)

ILLEGAL CONTRACTS.—

Effect of Illegality—General Rule.—The law leaves the parties where it finds them and will afford no relief. (*Sage* v. *Hampe*, 235 U. S. 99; *Pelosi* v. *Bugbee*, 217 Mass. 579; *Hart* v. *City Theatres Co.*, 215 N. Y. 322.)

Exception to General Rule—Parties Equally Guilty.—Where parties to an illegal contract are in *pari delicto*—equally guilty—but public policy requires the intervention of the courts, relief may be obtained. (*Western Union Tel. Co.* v. *Burlington etc. R. Co.*, 11 Fed. 1.) But: "Courts are and should be cautious in affording relief to a fraudulent debtor or other violator of the law under this exception, and should act only where it is evident that some greater public good can be subserved by action than by inaction." (*O'Connor* v. *Ward*, 60 Miss. 1025.)

Exception—One Party Guilty.—Where parties are not equally guilty and where it is in the interest of public policy to allow one of the parties to obtain relief from the transaction, the courts have granted relief. (*Logan County Nat. Bank* v. *Townsend*, 139 U. S. 67; *Duval* v. *Wellman*, 124 N. Y. 156.)

Exception—Object not Consummated.—Where the illegal purpose is not consummated, the agreement may be repudiated and the consideration paid thereunder recovered. (*Nat. Bank* v. *Carr*, 189 U. S. 426; *Fisher* v. *Hildreth*, 117 Mass. 558; *Donville* v. *Merrick*, 25 Wis. 688.)

INTERPRETATION OF CONTRACTS.—The courts in interpreting contracts apply broad principles to arrive at the intent of the parties. "The rules of interpretation ought not to be subtle; they are designed for people of common understanding; not as an act of logic but as the plain reason of a father of a family." (*Gathright* v. *Callaway County*, 10 Mo. 663.)

Intention of the Parties.—"The purpose of all interpretation is to ascertain and give effect to the intention of the parties to the contract as expressed by their writing." (*Alf. Bennett Lumber Co.* v. *Walnut Lake Cypress Co.*, 105 Ark. 421; also *Chesapeake etc. Canal Co.* v. *Hill*, 15 Wall. 94; *Smith* v. *Kerr*, 108 N. Y. 31; *Kluster* v. *Joseph Schlitz Brewing Co.*, 143 Wis. 347.)

Construction as a Whole.—The intention of the parties must be gathered from the entire contract, not a portion of it. (*Koles* v. *Borough Park Co.*, 142 App. Div. [N. Y.] 765.)

Separate Writings.—Where separate letters or instruments relate to one transaction or separate papers referred to, they will be read with reference to one another to interpret the contract. (*Pittsburgh etc. R. Co.* v. *Keokuk etc. Bridge Co.*, 155 U. S. 156; *Illinois Match Co.* v. *Chicago etc. R. Co.*, 250 Ill. 396; *Poel* v. *Brunswick-Balke-Collender Co.*, 216 N. Y. 310; *Hunt* v. *Frost*, 4 Cush. 54.)

Meaning of Words.—"The language employed is given its natural and commonly understood meaning." (*U. S. Fidelity etc. Co.* v. *French Mut. Gen. Soc.*, 212 Fed. 620.)

Technical Words.—Technical words will be interpreted in the sense in which they are generally used in the business to which the contract relates. (*Potter* v. *Phoenix Ins. Co.*, 63 Fed. 382.)

Writing and Printing.—Where both are used in a contract and are in conflict, the writing will prevail. (*United Surety Co.* v. *Summers*, 110 Md. 95.)

Words and Figures.—If in conflict, words govern. (*United Surety Co.* v. *Summers*, 110 Md. 95.)

Implied Terms.—In addition to words used, a contract also includes what is necessarily to be implied from the language used. (*Du Pont de Nemours Powder Co.* v. *Schlotterman*, 218 Fed. 353; *Senior* v. *Etger*, 213 N. Y. 589.)

Laws of the State.—The law of the state where the contract was made becomes part of it. (*Southern Surety Co.* v. *Oklahoma*, 241 U. S. 582; *People* v. *Metropolitan Surety Co.*, 211 N. Y. 107.)

Place.—"A contract as a rule is considered as entered into at the place where the offer was accepted (*Compagnie Générale etc.* v. *Simon Hertzig etc. Cie.*, 89 Misc. [N. Y.] 573; *In re Kahn*, 55 Minn. 509) or where the last act necessary to complete it is performed (*Clark* v. *Bell*, 223 Fed. 573).

Time.—If limited, the time runs from the date of the contract.

Ambiguous Contracts.—"If one interpretation of an ambiguous contract renders it valid and the other invalid, the former will govern. Likewise if one interpretation renders the contract reasonable and the other unreasonable the former will prevail."

Surrounding Circumstances Considered.—"The circumstances surrounding the parties when the contract was made form a sort of context that may be resorted to in doubtful cases to aid in arriving at the meaning of the contract." (*Singer* v. *Brenner*, 19 Pa. Dist.)

Liquidated Damages or Penalty.—Where a contract provides for the payment of a sum of money as liquidated damages in the event of a breach, whereas in fact the sum agreed upon is in the nature of a penalty, the courts will not enforce the contract. On the other hand, if the parties call it a penalty where it is in fact liquidated damages, the courts will interpret it as liquidated damages. (*War* v. *Building Co.*, 125 N. Y. 230.)

What Law Governs.—In general, the law of the place where the contract was made governs as to execution, authentication, and construction. As to performance, satisfaction, or discharge, the law of the place where the object of the contract is carried out governs. "As to mere personal contracts the law thereof as to their validity and interpretation, is that of the place where they were made; the *lex loci contractus*, unless the parties thereto intended that they should be governed by the law of the place of performance: the *lex loci solutionis*, or of some other place. That is, the place of the contract is, generally speaking, a matter of mutual intention, but the intended place, as determined by legal presumption in some cases and evidentiary circumstances in others, settles all questions as to the legal test of validity and interpretation. Such presumption, in the absence of evidence to the contrary, is that the place of making and performance, in a physical sense, is the place in a legal sense, but the place of performance when different from that of the actual making, is the place in such legal sense, subject to the presumption being rebutted by clear evidence of intention, this being again subject to some exceptions in case of intention to commit fraud on the law." (*International Harvester Co.* v. *McAdam*, 142 Wis. 114.)

DISCHARGE OF CONTRACTS.—Contracts may be discharged by

1. Performance
2. Agreement
3. Breach
4. Operation of law
5. Impossibility of performance

1. DISCHARGE BY PERFORMANCE.—In order that performance may discharge a contract, each party must have completed his part. In an executory contract performance by one discharges his obligations but not the contract. Where a promise is given for an executed consideration the performance of the promise discharges the contract.

Sufficiency of Performance.—Under the common law, performance must be strictly in accordance with the terms of the contract. The modern rule interprets sufficiency of performance to the effect that where one party has substantially completed his part he may recover his contract price less the amount the other party would have to pay for the completion of any minor, unintentional, and immaterial omission or deviation. This rule holds true, particularly in construction and building contracts. (*Heckmann* v. *Pinkney*, 81 N. Y. 211.)

Minor Unintentional Omissions and Deviations.—The courts construe minor, unintentional omissions and deviations as those that are "slight or susceptible of remedy, so that an allowance out of the contract price will give the other party substantially what he contracted for." (*Elliott* v. *Caldwell*, 43 Minn. 357.)

Time for Performance.—Where time is of the essence of a contract and so stated therein, it is strictly construed and the contract to be discharged by performance must be finished within the time limit. If completed after that time it is not performance and is not binding on the other party unless he waives the breach.

Satisfaction of One of the Parties.—Contracts which must be performed to the satisfaction of one of the parties can be discharged by performance only when the party is satisfied. Interpretation of such contracts depends on the subject matter. If it relates to personal tastes or judgment of one of the parties, he is the sole judge. The only requirement is that he be honest about his dissatisfaction.

2. DISCHARGE BY AGREEMENT.—Contracts may be discharged by mutual agreement. This may be done by

1. A new agreement to supersede the original one, or
2. The original contract may provide for discharge on the happening of a condition subsequent.

Such agreements must possess all the elements necessary to support a contract.

New Agreement.—This is in effect a new contract if expressly substituted for the old one, or where the new contract is inconsistent with the old one. In either case the original contract is discharged by agreement.

New Agreement—Novation.—Where a third person is brought into the substituted agreement to take the place of one of the original parties, with the consent of all three, the new substituted agreement is called a **novation.** The consideration of each party for the new contract consists of the creation of new rights and liabilities and the extinction of the old ones. (*Ford* v. *Adams*, 2 Barb. [N. Y.] 349.)

Contracts Which Cannot Be Discharged by Agreement.—Contracts for the benefit of third parties cannot be discharged by agreement of the original parties where the third party has been notified and has accepted it. To obtain the discharge of such contracts the consent of the third party is necessary.

3. DISCHARGE BY BREACH.—A breach of contract gives the injured party a right of action and generally discharges the contract. Such breach may be by

1. Failure of one of the parties to perform.
2. Refusal of one of the parties to perform.
3. One of the parties doing something which renders performance impossible.
4. Denial of the contract.

Failure to Perform.—To entitle a person to bring an action for failure to perform, he must have done all that can be done. Where time is of the essence, failure to complete within the time is a breach. If the contract is divisible, the failure to perform one part does not excuse the other party from performing the rest.

Refusal to Perform.—Refusal to perform by one party within the time for performance relieves the other party from further obligation, and he has the right to sue at once for the damages he has sustained.

Denial of Contract.—There must be an unqualified and definite renunciation, not a mere expression of intention not to perform. (*Drugiey* v. *Olen*, 117 U. S.)

4. DISCHARGE BY OPERATION OF LAW.—Contracts may be discharged by operation of law. This may be bankruptcy, alteration of the written instrument, or merger.

Bankruptcy.—Under the bankruptcy law the debtor is released of debts and liabilities provable under the statute where the bankrupt has obtained his discharge.

Alteration of Written Instrument.—Alteration means some erasure or addition which changes the meaning of the contract. It must relate to a material part and must have been intentionally made by one of the parties to the contract without the consent of the other party.

Merger.—The acceptance of a higher security for a lower one, where the parties are the same and the subject matter of the two securities is identical, results in the discharge of the original contract. This refers to cases where a judgment is recovered by one of the parties suing on a contract, or a sealed contract made by the parties covering the same transaction in an existing written instrument.

5. DISCHARGE BY IMPOSSIBILITY OF PERFORMANCE.—Impossibility of performance does not discharge a contract except where there is a legal impossibility or a physical inability in certain cases.

Legal Impossibility.—Where a statute enacted subsequent to the making of the contract renders the performance impossible without a violation of the law, the contract is discharged.

Physical Inability.—Destruction of the subject matter where the contract relates to a specific article or incapacity of the party where the contract was for personal service. discharges the contract on the ground of impossibility of performance.

Law of Corporations

DEFINITION.—"A corporation is an artificial person created by law for specific purposes, the limit of whose existence, powers and liberties is fixed by its charter." (Georgia Civil Code, 1831.) In a number of states corporations are defined by statute, similar to the one just given, which sets forth the essence of the many court decisions. For more comprehensive definitions see C. J. Baldwin, in *Mackay* v. *N. Y. etc. R. Co.*, 82 Conn. 73; *Chillicothe Bank* v. *Swayne*, 8 Ohio 257; *Dartmouth College* v. *Woodward*, 4 Wheat. (U. S.) 518.

In the last-mentioned case Chief Justice Marshall says: "A corporation is an artificial being, invisible, intangible and existing only in the contemplation of law. Being a mere creature of law, it possesses only those properties which the charter of its creation confers upon it, either expressly or as incidental to its very existence. These are such as are supposed best calculated to effect the object for which it was created. Among the most important are immortality, and, if the expression may be allowed, individuality; properties, by which a perpetual succession of many persons are considered the same, and may act as a single individual. They enable a corporation to manage its own affairs, and to hold property, without the perplexing intricacies, the hazardous and endless necessity of perpetual conveyances for the purpose of transmitting it from hand to hand. It is chiefly for the purpose of clothing bodies of men, in succession, with those qualities and capacities, that corporations were invented, and are in use. By these means, a perpetual succession of individuals are capable of acting for the promotion of the particular object, like one immortal being."

DISTINCTIVE FEATURES.—The most important distinctive attributes of corporations are separate legal entity and continuous existence. (*Liverpool etc. L. etc. Co.* v. *Olivia*, 10 Wall. 566; *People* v. *Coleman*, 133 N. Y. 279.)

AS A LEGAL ENTITY.—A corporation is a distinct legal entity, entirely separate from its members, with only such powers as are expressly or impliedly conferred on it by law. As an incident of such legal entity, it can hold property, contract, and sue as a natural person may. The corporate body can act only through its officers as agents whose acts are regarded as those of the legal entity as distinguished from its members. (*J. J. McGaskill Co.* v. *U. S.*, 216 U. S. 504; *Saranac etc. R. Co.* v. *Arnold*, 167 N. Y. 368; *Old Dom. Copper Min. etc. Co.* v. *Bigelow*, 203 Mass. 159.)

Corporation Distinct from Its Members.—"Every corporation is a person artificial, it is true, but nevertheless a distinct legal entity. Neither a portion nor all of the natural persons who compose a corporation, or who own its stock and control its affairs, are the corporation itself; and when a single individual composes a corporation he is not the corporation. In such case the man is one person created by the Almighty, and the corporation is another person created by law. It makes no difference in principle whether the sole owner of the stock of a corporation is a man or another corporation. The corporation owning such stock is as distinct from the corporation whose stock is so owned as the man is from the corporation of which he is the sole member." (*Macon Exchange Bank* v. *Macon Cons. Co.*, 97 Ga. 1.)

Property Rights.—A shareholder does not own a specific part of corporate property. "The money and property of a corporation belong to it and not to the individual members." (*Tomlinson* v. *Bricklayers' Union*, 87 Ind. 308.)

"The estate and rights of a corporation belong so completely to the body that none of the individuals who compose it have any rights of ownership in them, nor can they dispose of any part of them." (*Williamson* v. *Smoot*, 7 Mart [La.] 31.)

Debts, Torts and Legal Actions.—"A corporation and its shareholders are distinct legal entities. They are not responsible for the debts or the torts of the corporation. They cannot be parties in actions respecting corporate rights nor have they any title or direct interest in the property." (*Keith* v. *Clark*, 4 Lea [Tenn.] 718.)

Separate Corporations.—Two or more corporations are separate entities even though they are owned by the same stockholders. "The mere fact that the stockholders in two corporations are the same or that one corporation exercises a control over the other through ownership of its stock or through identity of its stockholders, does not make either the agent of the other, nor does it merge them into one, so as to make a contract of one binding on the other where each corporation is separately organized under a distinct charter. (*Martin Development Co. of America*, 240 Fed. 42; *New York Air Brake Co.* v. *Int. Steam Pump Co.*, 120 N. Y. Supp. 683.)

CONTINUOUS EXISTENCE.—The capacity of continuous succession whereby members elect or appoint their successors is a distinctive attribute of corporations although not necessary for corporate existence. A corporation has perpetual succession where its life is not limited by its charter or by statute. (*Dartmouth College* v. *Woodward*, 4 Wheat. [U. S.] 518; *Thomas* v. *Dakin*, 22 Wend. [N. Y.] 9.)

"The essence of a corporation is: (1) perpetual succession under a special name and in an artificial form; (2) the power to take and grant property, contract obligations, sue and be sued by its corporate name as an individual; and (3) to receive and enjoy in common grants of privileges and immunities." (*Thomas* v. *Dakin*, 22 Wend. [N. Y.] 9.)

CLASSIFICATION.—Corporations are of many kinds, all divided into various classes depending upon their nature. Textwriters have generally employed the following classification:

- CORPORATIONS SOLE
- CORPORATIONS AGGREGATE
  - Public
  - Quasi-Public
  - Private
    - Business
    - Ecclesiastical
    - Charitable

Corporations sole consist of a single individual. Such corporations are rare in America.

Corporations aggregate are composed of a number of individuals. Such corporations are divided into:

1. Public corporations, which are formed to promote public objects such as states, counties, municipalities, etc.

2. Quasi-public corporations, which are corporations organized by private individuals for private gain through the promotion of some public purpose, such as railroads, trolley lines, gas and electric companies. These are generally referred to as public service or public utility corporations.

3. Private corporations are those formed to promote and conduct private enterprises. Such corporations are divided into:

Business corporations
Ecclesiastical corporations
Charitable corporations

The foregoing classification is of interest from a historical point of view, but for practical purposes the classification under the New York statute, which in substance is the same in most states of the Union, is of greater value.

Classification under New York Statute.—

MUNICIPAL

STOCK
- Moneyed
- Transportation
- Business

NON-STOCK
- Religious
- Membership
  - Cemetery
  - Library
  - Co-operative
  - Board of Trade
  - Agricultural

A **municipal corporation** is a subdivision of the state established by law with powers of local government, such as town, cities, counties, etc.

A stock corporation is "a corporation having a capital stock divided into shares and which is authorized by law to distribute to holders thereof dividends or shares of the surplus profits of the corporation."

Non-stock corporations comprise all other corporations and include clubs, charitable institutions, and educational corporations.

A moneyed corporation is a stock corporation subject to the banking or insurance laws, and is formed under such laws. They include banks, insurance companies, trust companies, etc.

Transportation corporations are those stock corporations organized to conduct business as common carriers, such as railroads, canals, etc.

Business corporations are those stock corporations organized to carry on business in the usual commercial sense. "The term 'business corporation' generally means a corporation engaged in financial dealings, buying and selling, traffic, and mercantile transactions in general." (*Grenough* v. *Tiverton Police Com.*, 30 R. I. 212.)

DOMESTIC AND FOREIGN CORPORATIONS.—Corporations may also be classified according to the state or country under which they are organized. A domestic corporation is one that is within the jurisdiction of the state in which it was created. A corporation organized under the laws of the state of New York is a domestic corporation in New York State only, and if it goes into another state it is considered a foreign corporation of that state. Corporations created outside of the United States are designated as **alien corporations.**

CREATION OF CORPORATIONS.—

By Congress.—The Constitution of the United States does not give Congress direct authority to create corporations, but it may create corporations for the purpose of carrying out those powers expressly granted to it. "Whether or not Congress can create a corporation depends on the constitutionalty of the object to be attained. If a corporation is a means of attaining that object, the courts cannot inquire into it." (*McCullagh* v. *Maryland*, 4 Wheat. 316.)

By State Legislatures.—Business or stock corporations can only be created under authority of an act of the state legislature, which may prescribe the manner in which corporations may be formed. (*Briscoe* v. *Kentucky Bank*, 11 Pet. [U. S.] 257; *Boca-Mills Co.* v. *Curry*, 154 Cal. 326; *State* v. *Debenture Guarantee etc. Co.*, 51 La. Ann. 1874; *U. S. Trust Co.* v. *Brady*, 20 Barb. [N. Y.] 119.) The legislature cannot delegate that authority (*Southern Pacific R. Co.* v. *Orton*, 32 Fed. 457; *State Bank* v. *Hastings*, 1 Doug. [Mich.] 225; *People* v. *Dederick*, 161 N. Y. 195), nor can it grant corporate powers in conflict with the Constitution of the United States. (*Northern Securities Co.* v. *U. S.*, 193 U. S. 197.)

Under General Laws.—Business corporations are now generally created under the statutes of the several states, which are practically the same in general requirements. Substantial compliance with the statutes is necessary to bring the corporation into existence. (*Thompson* v. *People*, 23 Wend. 537; *Bigelow* v. *Gregory*, 73 Ill. 197.)

FORMATION.—The manner of organizing corporations under the statutes is practically the same in the different states, and consists of: (1) filing articles of incorporation, and (2) acceptance of charter.

ARTICLES OF INCORPORATION.—

Manner of Filing.—The certificate or articles of association must set forth the essentials required under the law, be signed and acknowledged by the incorporators, and presented to the designated officer of the state, usually the Secretary of State. This officer examines the articles as to form and substance and if approved grants the applicant a charter called the **certificate of incorporation,** which is recorded in his office, and a certified copy is filed in the county clerk's office where the corporation has its principal office.

Essentials.—The articles of incorporation must set forth the following requisites under the statute:

1. Name of corporation
2. Purpose
3. Capital stock
4. Location of principal office
5. Duration
6. Number of directors
7. Name and address of directors for first year (in some states)

Name of Corporation.—The name may be any one the incorporators desire to use, so long as it is not the same, or so nearly the same as to deceive, as that of any other domestic corporation or foreign corporation duly registered in the state. (*State* v. *Calios*, 150 Ala. 515; *Rhodes* v. *Piper*, 40 Ind. 369.)

Purpose.—The purpose, object, or business to be carried on by the corporation must be named with sufficient certainty to be reasonably clear and free from ambiguity. (*Utley* v. *Union Tool Co.*, 11 Gray [Mass.] 139; *People* v. *Beach*, 19 Hun [N. Y.] 259; *Atty. Gen.* v. *Lorman*, 59 Mich. 157; *Shick* v. *Citizens' Enterprise Co.*, 15 Ind. App. 329.) A corporation may be formed for any purpose not specifically forbidden by statute. (*Maxwell* v. *Akin*, 89 Fed. 178; *Market St. R. R. Co.* v. *Hellman*, 109 Cal. 571; *In re Southern Wisconsin Power Co.*, 140 Wis. 265.)

Capital Stock.—The amount of capital stock to be employed in the business as well as the kinds of shares must be stated in the charter or certificate. (*Byronville Creamery Assn.* v. *Ivers*, 93 Minn. 8.) Most states set a minimum capitalization, which in New York is $500; which state also requires that

one-half of the capital stock must be paid in within one year of the date of incorporation.

Number of Shares.—The number of shares into which the capital stock is divided together with the par value of each share, which may be fixed by the incorporators, must be set forth in the articles of incorporation. In New York and several other states there are restrictions as to the par value, which may not be less than, say, $5 or more than, say, $100. Stock without par value is permitted in some states.

Location of Principal Office.—The domicile of the corporation must be named in the articles of incorporation. The principal office must be within the state where it is incorporated. (*Meredith* v. *N. J. Zinc etc. Co.*, 59 N. J. Eq. 257; *Montgomery* v. *Forbes*, 148 Mass. 249; *Harris* v. *McGregor*, 29 Cal. 124.) This statutory requirement relates to the principal **corporate** office and does not necessarily mean the main business office.

Duration.—The life of the corporation may be for a term of years, or perpetual. Generally, if no time is set, it is perpetual; but in New York and several other jurisdictions this must be stated in the articles of incorporation.

Number of Directors.—The number of directors, generally not less than three, must in most states be set forth in the articles of incorporation.

Execution of Certificate.—The articles of incorporation must be signed and acknowledged by the incorporators (*State* v. *Beck*, 81 Ind. 500; *State* v. *Critchett*, 37 Minn. 13) who must have the qualifications prescribed by statute as to residence or citizenship (*People* v. *McDonough*, 60 N. Y. S. 45; *In re Chinese Club*, 1 Pa. Dist. 84) and as to number (*People* v. *Golden Gate Lodge* No. 6, 128 Cal. 257). Most states prescribe a minimum number of persons who may form a corporation. (*Montgomery* v. *Forbes*, 148 Mass. 249; *State* v. *Critchett*, 37 Minn. 13.)

QUALIFICATIONS.—Generally, any person capable of contracting and holding property in the state under whose laws a corporation is to be created may become an incorporator. "Legal infirmity in the parties is as fatal to the validity of an attempted corporate organization as is legal infirmity in the purpose of the organization." (*Am. Ball Bearing Co.* v. *Adams*, 222 Fed. 967.)

PAYMENT OF FEES AND TAXES.—One of the essentials for corporate existence in many states is the payment of certain taxes or fees fixed by statute. (*People* v. *Cook*, 47 Hun 467; *Atty. Gen.* v. *No. Pacific Ry. Co.*, 157 Wis. 73; *St. Louis Southwestern R. Co.* v. *Tod*, 94 Tex. 632.)

ACCEPTANCE OF CHARTER.—To bring a corporation into being an implied or express acceptance of the charter is necessary. (*Aspinwall* v. *Davies*, 22 How. [U. S.] 364; *Ellis* v. *Marshall*, 2 Mass. 269; *State* v. *Dawson*, 16 Ind. 40.) A corporation organized under general laws expressly accepts the charter generally at the first meeting of the stockholders, or impliedly accepts it by acting under it as a going concern. This acceptance must be in its entirety. The corporation cannot accept part and reject part. (*Rex* v. *Westwood*, 4 Barn. & Cress. 781.) When a corporation accepts a charter it is bound by it as well as by the general laws affecting such corporations.

BEGINNING OF CORPORATE EXISTENCE.—A corporation organized under general laws begins its corporate existence when the conditions prescribed by statute are complied with. (*Am. Ball Bearing Co.* v. *Adams*, 222 Fed. 967; *People* v. *Mackay*, 255 Ill. 144; *State* v. *Critchett*, 37 Minn. 13; *Jersey City Gas Co.* v. *Dwight*, 29 N. J. Eq. 242.) This is generally signified

by the Secretary of State accepting and recording the articles of incorporation, which when duly filed becomes the certificate of incorporation or the charter. Substantial compliance with the statute is sufficient. (*People* v. *Montecito Water Co.*, 97 Cal. 276; *Buffalo etc. R. Co.* v. *Hatch*, 20 N. Y. 157.)

Substantial Compliance.—The performance of the conditions necessary to effect incorporation are liberally construed by the courts. In *Hughes* v. *Antietam Mfg. Co.*, 34 Md. 316, the court said: "The policy of the law, as plainly indicated by the several provisions of the general corporation act, is to encourage the formation of these and other like companies, in order that not only the subscribers, but the public, may share the advantages, supposed to flow from combined capital and labor, and whilst the requirements of the law are to be fairly and substantially complied with, the rights and franchises of corporations and the interests of stockholders are not to be frittered away by technicalities, nor sacrificed to a strained construction of the statute."

CORPORATIONS DE JURE.—A corporation *de jure* is one created in accordance with all the provisions of the law. The charter of such a corporation is invulnerable to legal action even by the state itself. (*Flatwood Dist. Bd. of Education* v. *Berry*, 62 W. Va. 433; see also 24 L. R. A. 259.)

CORPORATION DE FACTO.—A corporation *de facto* is a corporation whose creation was irregular and not in full compliance with the law. The legality of such a corporation can be attacked only by the state and cannot be attacked collaterally. The elements necessary to classify a corporation as *de facto* are: (1) a general law under which a *de jure* corporation could be organized; (2) an attempt to organize under the law and to comply with the statutory requirements; (3) exercise of corporate powers under such an attempted organization. (*Yaques* v. *Yuba County*, 24 Cal. App. 381; *Mackay* v. *N. Y. etc. R. Co.*, 82 Conn. 73; *Imperial Bldg. Co.* v. *Chicago Board of Trade*, 238 Ill. 100; *Von Langerke* v. *N. Y.*, 150 App. Div. [N. Y.] 98; *Utah Light etc. Co.* v. *U. S.*, 230 Fed. 343; *Healey* v. *Steele Center Creamery Assn.*, 115 Minn. 451.) "A corporation *de facto* is not a corporation legally constituted, but a corporation organized and operated under color of the law." (*Am. Salt Co.* v. *Heidenheimer*, 80 Tex. 344.)

Stockholders' Liability.—The incorporators as stockholders of a *de facto* corporation, in the absence of fraud, are not personally liable in a collateral attack by creditors for the debts of a corporation. (*Brown* v. *Melick*, 185 Ill. App. 3; *Richards* v. *Minn. Savings Bank*, 75 Minn. 196; *Stout* v. *Zulick*, 48 N. J. L. 599.)

PRETENDED CORPORATIONS—LIABILITY ON.—Persons holding themselves out as a corporation when in fact there is none, either *de jure* or *de facto*, are liable individually or as partners on contracts entered by them or by their agents as agents of the pretended corporation. (*Harrill* v. *Davis*, 168 Fed. 187; *Cord* v. *Moor*, 68 App. Div. [aff. 173 N. Y. 598]; *Slocum* v. *Heod*, 105 Wis. 431; *Campbell* v. *J. L. Campbell Co.*, 117 La. 402; *Montgomery* v. *Forbes*, 148 Mass. 249.)

CORPORATE POWERS.—

General Powers.—"The charter of a corporation read in connection with the general laws applicable to it, is the measure of its powers, and a contract manifestly beyond those powers will not sustain an action against the corporation. But whatever under the charter and general laws, reasonably construed, may fairly be regarded as incidental to the object for which the corporation is created is not to be taken as prohibited." (*Green Bay etc. Ry. Co.* v. *Union etc. Co.*, 107 U. S. 98.)

Implied Powers.—These consist of anything reasonably necessary to carry out its express corporate powers, and may consist of power to:

1. Make contracts. (*White Water etc. Co.* v. *Vallette*, 21 How. 414.)
2. Purchase and sell personal property.
3. Borrow money. (*Wright* v. *Hughes*, 119 Ind. 324.)
4. Issue and accept commercial paper required in its business but not for accommodation. (*Grommes* v. *Sullivan*, 81 Fed. 45.)
5. Make by-laws. (*Ireland* v. *Globe etc. Co.*, 19 R. I. 180.)

ULTRA VIRES CONTRACTS.—"The contracts of corporations are said to be *ultra vires* when they involve some adventure or undertaking not within the scope of their charter, which is the rule of corporate action." (*Leslie* v. *Lorillard*, 110 N. Y. 519.)

Executory Ultra Vires Contracts are Void.—If the *ultra vires* contract is executory, i.e., if neither party has performed its part, the contract is void and unenforcible. (*Central Trans. Co.* v. *Pullman etc. Co.*, 139 U. S. 24; *Northwestern etc. Co.* v. *Shaw*, 37 Wis. 655.)

Partly Performed Ultra Vires Contract—Decisions in Conflict.—The rule followed by the **U. S. Supreme Court, Massachusetts, Alabama,** and a few other states, is that an *ultra vires* contract is void, and the courts refuse to enforce performance by the party in default. (Rule followed in U. S. Supreme Court, Ala., Ill., Me., Mass., Tenn., Vt., and in England.)

The rule followed by **most states** is that where an *ultra vires* contract is performed by one side the other party is estopped from setting up the defence of *ultra vires*. (Rule followed in New York and all the other states of United States except those named.)

Executed Ultra Vires Contracts.—If an *ultra vires* contract is fully executed by both sides, neither party can avail himself of the defense of *ultra vires*. (*Merchants Nat. Bank* v. *Wehrmann*, 202 U. S. 295.)

CAPITAL STOCK DEFINED.—The capital stock of a corporation is the amount of stock a corporation is authorized to issue by its charter. (*Powers* v. *Detroit etc. R. R. Co.*, 201 U. S. 543; *Christensen* v. *Eno*, 106 N. Y. 97.) This amount can be increased or diminished only by amendment of its charter in the prescribed statutory manner. (*Scovill* v. *Thayer*, 105 U. S. 143; *Schenck* v. *Andrew*, 46 N. Y. 589.)

Capital and Capital Stock Differentiated.—The capital of a corporation is the sum total of all its assets less its liabilities, whereas capital stock is the amount of stock authorized. "The funds of the company may fluctuate. Its capital stock remains invariable, save by legislative enactment. This distinction between the value of the property of incorporated companies and their capital stock is perfectly familiar." (*The State* v. *Morristown Fire Assn.*, 23 N. J. L. 195.)

ISSUED STOCK.—Issued stock is stock issued by the corporation for value of stock for which the company has accepted a subscription so as to give the subscriber title to it.

UNISSUED STOCK.—Represents that part of its authorized capital stock which has not been issued. It is not an asset of the corporation but is merely a right which can be exercised in the issue of stock for money or property.

OVERISSUED STOCK.—Such stock is void as it is beyond the power of the corporation to issue it and can in no way be validated. (*Scovill* v.

Thayer, 105 U. S. 143; *Olson* v. *State Bank*, 67 Minn. 267; *New York etc. R. Co.* v. *Schuyler*, 34 N. Y. 30.)

TREASURY STOCK.—Treasury stock is stock lawfully issued by the company for money, services, or property, and reacquired by purchase or donation. The company may sell such stock at any price and on any terms it may deem proper. (*Lake Superior Iron Co.* v. *Drexel*, 90 N. Y. 87; *Pullman* v. *Ry. Equipment Co.*, 73 Ill. App. 313.) Sale below par will not subject the purchaser to liability for the unpaid balance. Such stock is generally used for the purpose of raising working capital. (*Quinn* v. *Whitney*, 204 N. Y. 363.) "Treasury stock is stock which is returned by the person to whom it is issued to the corporation as a gift to sell the same and put the proceeds in the corporation treasury as working capital." (*Newman* v. *Sexton*, 156 Ill. App. 517.)

FULL-PAID STOCK.—This is stock paid for in full on which there is nothing due to the corporation. (*Johnson* v. *Nat. Bldg. etc. Assn.*, 125 Ala. 465.)

WATERED STOCK.—This is stock issued as full-paid stock in payment of property at inflated or fictitious values, or issued in any form in excess of the value received for it.

INCREASE OR DECREASE OF CAPITAL STOCK.—The capital stock of a corporation may be increased or decreased subsequent to organization by following the statutory procedure, which generally consists of:

1. Obtaining unanimous consent of stockholders in writing, or
2. By vote of a majority of the stock at a meeting duly called for that purpose, and
3. Filing certificate of the amount of increase or decrease with the Secretary of State and county clerk where the corporation has its principal office.

In decreasing the capital stock the consent of the State Comptroller is necessary. The capital stock cannot be decreased below the amount of the liabilities of the corporation. The state laws should be consulted on this point.

Stockholders' Rights to Increased Stock.—The existing stockholders of a corporation have a pre-emptive right to purchase proportional shares of a subsequent issue of increased stock. (*Bacon* v. *Gross*, 165 Cal. 481; *Erdman* v. *Bowman*, 58 Ill. 444; *Luther* v. *C. T. Luther Co.*, 118 Wis. 112.)

Increase in Number of Shares and Par Value.—The par value or the number of shares of a corporation can neither be increased nor decreased unless expressly authorized by the charter or by the legislature. (*Scovill* v. *Thayer*, 105 U. S. 148; *Fall River Gas Works Co.* v. *Board of Gas etc. Com.*, 214 Mass. 529; *Einstein* v. *Rochester Gas etc. Co.*, 146 N. Y. 46; *State* v. *No. Pacific R. Co.*, 157 Wis. 73.) The procedure is similar to that required to increase stock mentioned above.

COMMON STOCK.—Differs in one or more ways from what is termed preferred stock. The owner of common stock is entitled to an equal pro rata division of the profits, if there be any, but has no advantage over any other shareholder or class of shareholders of common stock.

PREFERRED STOCK.—On the other hand, preferred stock generally entitles its owner to dividends out of the net profits before, and in preference of, the holders of the common stock. "Generally the rights, powers and

privileges of preferred stockholders depend upon terms upon which it is issued; preferred stock taking a multiplicity of forms according to the desire or ingenuity of the stockholders, and the necessity of the corporation itself." (*Storrow* v. *Texas Cons. Compress etc. Assn.*, 87 Fed. 612.)

The preference of preferred stock may consist of: (1) preference as to dividends only; (2) preference as to assets on liquidation. Unless so stated when issued or on the certificate, preferred and common stock share alike in distribution of assets on dissolution.

ORIGINAL ISSUE.—

For Value.—Stock must be issued for value, which may be money, labor, services, or property, and which may be either tangible or intangible, such as good-will, copyrights, etc. (*In re Manufactured Box etc. Co.*, 251 Fed. 957; *Nat. Tube Works Co.* v. *Gilfillan*, 124 N. Y. 302; *Gillett* v. *Chicago Title Co.*, 230 Ill. 373.)

For Less Than Par.—Some states prohibit the original issue of stock by a corporation for less than par, while in others a corporation may issue and sell its stock in good faith at less than par. (*Dickerman* v. *No. Trust Co.*, 176 U. S. 181; *O'Dea* v. *Hollywood Cemetery Assn.*, 154 Cal. 53; *Goodnow* v. *Am. Writing Paper Co.*, 72 N. J. Eq. 645.)

"The rule seems to be established that between stockholders one cannot legally be called upon to make good any shortage in value between assets and the nominal value of the stock, when his stock is issued under a contract with the company as full paid, whether as a bonus or for property at an over-valuation when the issue is consented to by all the stockholders. It is a bargain between the contracting parties, which, in the absence of fraud, they cannot abrogate. They may let in one to participate in dividends, and thus reduce what they would have on that account, and decrease their share of its assets on final distribution; but they are dealing with their own property, and so long as they do not divide any part of the paid in capital they may contract to apportion dividends, property payable, and also the assets, among as many as they may choose, subject to the rights of creditors." (*Goodnow* v. *Am. Writing Paper Co.*, 72 N. J. Eq. 645.)

As stated, such unpaid stock, in case of insolvency would be liable for the amount unpaid.

STOCK CERTIFICATE ISSUED BY OFFICER.—Certificates of stock issued by an officer or agent clothed with authority to issue genuine certificates, are binding on the corporation even though the officer may have exceeded his authority or issued certificates fraudulently or for his personal benefit. (*Jarvis* v. *Manhattan Beach Co.*, 148 N. Y. 652.) "The ground of liability is not that the principal has been benefited by the act of the agent, but that an innocent third person has been damaged by confiding in the agent who was accredited by the principal as worthy of trust, in that particular business." (*Tome* v. *Parkersburg Branch R. Co.*, 39 Md. 39.)

Forged Stock Certificate.—A corporation, in the absence of negligence, is not liable for a certificate forged by an officer or employer. (*Hill* v. *C. T. Jewett Pub. Co.*, 154 Mass. 172.)

SHARES OF STOCK.—"A share of the capital stock is the right to partake, according to the amount put into the fund, of the surplus profits of the corporation; and ultimately on dissolution of it, of so much of the fund thus created, as remains unimpaired, and is not liable for the debts of the corporation." (*Burral* v. *Bushwick Ry. Co.*, 75 N. Y. 211.) The written evidence is through a paper issued by the corporation called a stock cer-

tificate. "Each share represents an aliquot part of the capital stock." (*Farrington* v. *Tennessee*, 95 U. S. 679.)

Capital Stock and Shares of Stock Differentiated.—These are distinct from each other. Capital stock belongs to the corporation as a legal person, whereas the shares of stock are the property of the stockholder according to their holdings. (*People* v. *Dederick*, 161 N. Y. 195; *Warner* v. *Brown*, 121 N. E. 69; *Kohl* v. *Lilienthal*, 81 Cal. 378.)

CERTIFICATE OF STOCK.—A certificate of stock is not the stock itself but merely written evidence of the contract between the corporation and the holder named therein. This contract entitles the holder to share in the corporate management, surplus profits, and, on dissolution, in the surplus after paying all corporate debts. (*Gibbons* v. *Mahon*, 126 U. S. 549; *Daly* v. *People's Bldg. etc. Assn.*, 172 Mass. 533; *U. S. Radiator Corp.* v. *State*, 208 N. Y. 144; *Richardson* v. *Shaw*, 209 U. S. 365; *Cortelyou* v. *Imperial Land* Co., 156 Cal. 373.)

Certificates of Stock Are Personal Property.—The shares or certificates of stock are personal property regardless of whether the property of the corporation is realty or personalty. (*Jellenik* v. *Huron Copper Min. Co.*, 177 U. S. 1; *Weaver* v. *Bardon*, 49 N. Y. 286; *Chesebrough* v. *San Francisco*, 153 Cal. 559.) Being regarded as personal property, certificates of stock may be disposed of as the owner may see fit, by sale, gift, etc. (*Farmers L. & T. Co.* v. *Chicago etc. R. Co.*, 163 U. S. 31; *McGue* v. *Rommel*, 148 Cal. 539; *Roosevelt* v. *Hamblin*, 199 Mass. 127; *Ingraham* v. *Nat. Salt Co.*, 72 App. Div [N. Y.] 582; *In re Klaus*, 67 Wis. 401.)

Negotiability.—Certificates of stock are not negotiable instruments either in form or character. (*Hammond* v. *Hastings*, 134 U. S. 401; *Perkins* v. *Cowles*, 157 Cal. 625; *Barstow* v. *City Trust Co.*, 216 Mass. 330; *Knox* v. *Eden Musee Americain Co.*, 148 N. Y. 44.) "They do not run to bearer or to the order of the person to whom they are given. They simply declare that the person named in the certificate is entitled to a certain number of shares of stock." (*Oxford* v. *West. Syndicate Inv. Co.*, 170 N. W. 587.)

Transfer.—The owner of shares may transfer them by assignment in any manner sufficient to pass title to a chose in action. Assignment accompanied by delivery is sufficient to pass title. A transfer on the books of the company is not necessary unless prescribed by statute or charter. (*Ellis* v. *Essex Merrimack Bridge Proprietors*, 2 Pick. 243; *Lockwood* v. *Brantly*, 103 N. Y. 680.)

Effect of Transfer.—Transfer gives the transferee all the right held by the transferor as a stockholder. (*Manhattan Beach Co.* v. *Harned*, 27 Fed. 484; *Roosevelt* v. *Hamblin*, 199 Mass. 127.)

Pledge of Share.—Shares of stock may be pledged as collateral security and will be subject to the general laws governing pledges, in that title remains in the pledgor subject to the pledgee's lien until redeemed or sold under foreclosure. (*Germania Nat. Bank* v. *Case*, 991 U. S. 628; *Markham* v. *Jaudon*, 41 N. Y. 235; *Badwin* v. *Canfield*, 26 Minn. 43.)

NET PROFITS DEFINED.—"What is left after paying current expenses and interest on debts and everything else which the stockholders, preferred and common as a body corporate are liable to pay." (*Warren* v. *King*, 108 U. S. 389.)

DIVIDENDS DEFINED.—"Such a portion of accumulated net earnings, or surplus, as the directors of a corporation may deem expedient to be distributed, and in appropriate proceedings is by them ordered to be distributed

among those entitled by law to receive it; is *ex vi termini* the part of a thing which has been set apart for distribution." (*U. S. Life Ins. Co.* v. *Spinks*, 29 Ky. L. 960.)

Dividends Paid out of Profits.—Dividends can be declared and paid only out of net profits and surplus. (*Mobile etc. R. Co.* v. *Tennessee*, 153 U. S. 486; *Roberts* v. *Roberts-Wicks Co.*, 184 N. Y. 257.) "The general rule, even in the absence of any statute on the subject, is that dividends, in a going concern, can be properly declared and paid only out of profits, and not out of capital or assets required for the security and payment of creditors." (*Davenport* v. *Luries*, 72 Conn. 118.)

Rights to Dividends.—"Stockholders have no claim to a dividend until it is declared. Until that time it belongs to the corporation, precisely as any other property." (*Goodwin* v. *Hardy*, 57 Me. 143.) "Money earned by the corporation remains the property of the corporation, and does not become the property of the stockholders, unless and until it is distributed among them by the corporation." (*Gibbons* v. *Mabon*, 136 U. S. 549.) "A right to a dividend from profits of a corporation is no debt until the dividend is declared." (*Lockhart* v. *Van Alstyne*, 31 Mich. 75.)

Declared by Directors.—The board of directors legally sitting as a board have authority to declare dividends and fix the time, place, and manner of payment. (*King* v. *Paterson etc. R. Co.*, 29 N. J. L. 82.)

Property of Stockholders.—When so voted and due notice given to the public, dividends so declared become a vested right of, and are the property of, the stockholders. (*Ford* v. *East Hampton Co.*, 158 Mass. 84.)

Debt of Corporation—Date.—Dividends belong to stockholders at the time they were declared; if made payable at a later date and shares transferred in the meantime, the dividend belongs to the shareholder on the day they were declared. (*Hopper* v. *Sayre*, 112 N. Y. 530; *Wheeler* v. *Northwestern Co.*, 39 Fed. 347.)

Stock Dividends.—Corporations having an accumulated surplus invested in property necessary to operate the business may find it inexpedient to distribute such surplus as a cash or property dividend. They may, however, declare a stock dividend which is paid by the issue of capital stock. (*Williams* v. *Western Union Tel. Co.*, 93 N. Y. 162.)

The corporation should first obtain permission to increase its capital stock, unless it has a sufficient amount authorized but not yet issued, and then declare a dividend payable in its capital stock up to the amount of its accumulated surplus. The operation results in capitalizing surplus.

MANAGEMENT AND OPERATION—1. DIRECTORS.—The board of directors, as agents of the stockholders, are responsible for the management of the corporation. Directors are elected by the stockholders on a majority vote at the first and at such meetings thereafter as prescribed by the charter or by-laws.

Qualification.—Most states provide by statute that directors shall be stockholders, but "In the absence of a statute requiring it, the discretion of the stockholders in electing directors is not limited to persons holding stock.' (*State* v. *McDaniel*, 22 Ohio St. 307; *Beardsley* v. *Johnson*, 121 N. Y. 224.)

Powers.—"Within the chartered authority they have the fullest power to regulate the concerns of a corporation according to their best judgment, and contracts which the corporation could legitimately make come within the scope of the ordinary powers of corporate management." (*Beveridge* v. *N. Y. El. Ry. Co.*, 112 N. Y. 1.)

Responsibilities.—Are of a fiduciary nature. "The duties of directors are of the most responsible kind, and it is the purview of the law that they should be held to a strict accountability for their acts to the stockholders, towards whom they occupy the relation of trustees, with all which that term implies of power and responsibility." (*Beveridge* v. *N. Y. El. Ry. Co.*, 112 N. Y. 1.) (A comprehensive summary of the relation of directors to the corporation is set forth in *Bosworth* v. *Allen*, 55 L. R. A. 751, a leading case frequently cited.)

Directors are expected **to use reasonable care,** diligence, and skill in the discharge of their duties. (*Hun* v. *Cary*, 82 N. Y. 65; *Thompson* v. *Greely*, 107 Mo. 577.) At least such as would be used by an ordinarily careful man in his own personal business. (*Ackerman* v. *Halsey*, 38 N. J. Eq. 501; *Corn Bank* v. *Chatfield*, 121 Mich. 641.)

Negligence.—Directors are not liable for mistakes of judgment unless there was such gross carelessness that an ordinarily prudent man would not have done so or if bad faith were shown. (*Hun* v. *Cary*, 82 N. Y. 65.)

What Directors Cannot Do.—There are certain acts which belong to the stockholders as a body which are not delegated to their directors, among which are:

1. Dissolve the corporation unless authorized by the stockholders to do so.
2. Apply for or accept amendments to the charter.
3. Increase or decrease the capital stock.
4. Consolidate with another corporation.
5. Change by-laws.
6. Sell out or dispose of the corporate property so as to virtually put it out of business. (*Metropolitan El. Ry. Co.* v. *Manhattan El. Ry. Co.*, 11 Daly [N. Y.] 373.)

Directors' Contracts with Their Corporation.—In view of the conflict of decisions on this important subject the various views are given.

1. That such contracts are void as against public policy. The director, by reason of his fiduciary capacity, is precluded from entering on a contract in which his personal interests are in conflict with those of the corporation. (*Wilbur* v. *Lynde*, 49 Cal. 290; *Post* v. *Russell*, 36 Ind. 65; *Gardner* v. *Butler*, 30 N. J., Eq. 702; *Coleman* v. *Second Ave. R. Co.*, 38 N. Y. 201; *Haywood* v. *Lincoln Lumber Co.*, 64 Wis. 647.)
2. That such contracts are not void *per se*, but voidable by the corporation if the right is exercised within a reasonable time. (*Thomas* v. *Brownville etc. R. Co.*, 109 U. S. 522; *Hill* v. *Nisbet*, 100 Ind. 353; *Kelly* v. *Newburyport etc. R. Co.*, 141 Mass. 499; *Stewart* v. *L. V. R. R. Co.*, 38 N. J. L. 505; *Munson* v. *Syracuse etc. R. Co.*, 103 N. Y. 58.)
3. Such contracts when fair and entered into in good faith are valid, but subject to careful scrutiny by the courts. (*Pneumatic Gas Co.* v. *Berry*, 113 U. S. 322; *Gamble* v. *Queens Co. Water Co.*, 123 N. Y. 91; *Putnam* v. *Rubicon*, 32 Wis. 498.)

The tendency seems to be that the courts of most states are interpreting directors' contracts, wherever possible, in accordance with the third view.

Liability of Directors—To Creditors.—Directors are not personally liable to creditors for mismanagement of a business and subsequent loss to creditors unless there is fraud or such gross negligence as to amount to fraud. (*Saranac etc. Ry. Co.* v. *Arnold*, 41 App. Div. [N. Y.] 482; *Vose* v. *Grant*, 15 Mass. 505.)

To File Reports.—Most states require corporations to file reports of various kinds for several purposes, such as financial reports for tax purposes. In case of failure to file such reports, the officers or directors are usually subject to penalty. The statutes are strictly construed and to release the officers or directors from liability strict adherence to the statutory requirements is obligatory. (*Shanklin* v. *Gray*, 111 Cal. 88; *President etc. Manhattan Co.* v. *Kaldenberg*, 165 N. Y. 1.)

Removal of Directors.—Directors cannot be removed from office unless such power is provided in the statutes, the charter, or by-laws, and then only for the causes enumerated therein. Generally the causes for removal are negligence, misconduct in office, or "other reasonable cause." What is "reasonable cause" is for the stockholders to determine, and in the absence of direct fraud their decision cannot be interfered with. (*Re: The A. A. Griffing Iron Co.*, 63 N. J. L. 168. See Morawetz, § 542.)

2. OFFICERS.—

Appointment and Duties.—Usually the by-laws provide for the manner in which officers shall be appointed and also prescribe their duties. Directors usually elect officers, fix their salaries, and prescribe their duties where they are not set forth in the by-laws.

Powers.—Corporate officers are agents and are governed in general by the law of agency. They have only such powers as are conferred on them. Persons dealing with agents or officers of a corporation are chargeable with knowledge of the extent of authority of such officers. Where, however, an officer acts for a corporation for a considerable length of time, though in fact he has no authority to act as such officer or has continuously acted beyond his authority, the corporation is nevertheless bound by his acts on the principle of estoppel. (*Com. Mutual etc. Ins. Co.* v. *Union etc. Ins. Co.*, 10 How. [U. S.] 322; *Ashby Wire Co.* v. *Ill. Steel Co.*, 164 Ill. 147.)

Liabilities for False Representation.—Officers and directors are liable for false statements of material facts made with intent to deceive, such as representation as to solvency on which third parties relied and suffered damage as a consequence. (*Bank of Montreal* v. *Thayer*, 2 McCrary [U. S.]; *Morgan* v. *Skiddy*, 62 N. Y. 319.)

The President.—"In the absence of legislative enactment or provisions made in the by-laws, corporations usually act through their president, or those representing him. He being the legal head of the body, when an act is performed by him the presumption will be indulged that the act is legally done; and is binding upon the body; and, as a general rule, in the absence of the president, or when a vacancy occurs in office, the vice-president may act in his stead, and perform the duties which devolve upon the president." (*Smith* v. *Smith*, 62 Ill. 493.)

Other Officers.—Other officers are one or more vice-presidents, a secretary, and a treasurer, whose duties are such as are generally understood to belong to such officers or are prescribed for them.

STOCKHOLDERS' RIGHTS AND LIABILITIES.—

Relation.—"The relation between a corporation and its stockholders is essentially contractual. The charter is the embodiment of the contract." (*Hyams* v. *Old Dominion Co.* 113 Me. 294; *Jones* v. *Mo. Edison Elec. Co.*, 144 Fed. 153; *People's Mutual Ins. Co.* v. *Westcott*, 14 Gray [Mass.] 440.)

Rights of Stockholders.—

1. To attend and vote at corporate meetings.
2. Elect directors.

3. Participate in dividends or profits.
4. Share in corporate assets on dissolution.
5. Inspect corporate books.

Meetings of Stockholders.—Stockholders exercise their corporate functions at duly called meetings. (*In re Butler*, 207 Fed. 705; *Marlborough Mfg. Co.* v. *Smith*, 2 Conn. 579.) These are generally the annual meetings of stockholders, which must be held in the state wherein the corporation was incorporated unless permitted to be held elsewhere by the laws of that state.

Voting.—The right to vote is incidental to stock ownership conferred by statute or charter and cannot be limited or retained by the by-laws. Only stockholders of record are entitled to vote (*MacNeil* v. *Tenth Nat. Bank*, 46 N. Y. 325), and voting may be done in person or by proxy. One vote for each share is the rule in stock corporations. One vote for each member, in membership corporations.

A **proxy** is a power of attorney authorizing another person to attend a stockholders' meeting in his place and vote his stock. A proxy may be revoked at any time unless coupled with an interest.

Cumulative Voting.—By cumulative voting a minority of shareholders can obtain representation on a board of directors by accumulating their votes on one or a few candidates. By this method each stockholder has as many votes as he has shares multiplied by the number of directors to be elected. A stockholder may cast all his votes for one or more candidates as he sees fit. A minority, by confining their votes to one or a few, may obtain representation on the board.

Stockholders have the right to cumulative voting only if given to them under the statutes, charter, or by-laws of the corporation. It is not an inherent right of stock ownership. (*State* v. *Stockly*, 45 Ohio St. 304; *Lowenthal* v. *Rubber etc. Co.*, 52 N. J. Eq. 440.)

Quorum.—What constitutes a quorum at a meeting of stockholders is generally prescribed by the by-laws, and as a rule is a majority of stock outstanding. A majority of a quorum has power to decide questions brought before the meeting, which in turn is binding on the corporation.

Rights to Information.—The stockholders have a right to information regarding the business and affairs of the corporation. This is generally furnished in the reports of the officers and directors given at the annual meetings. (*Weir* v. *Bay State Gas Co.*, 91 Fed. 940; *Richmond* v. *Hill*, 148 Ill. App. 179.)

Right to Inspect Corporate Records.—A stockholder has a right to inspect corporate records and books for proper purposes and at proper times. (*Guthrie* v. *Harkness*, 199 U. S. 148; *Hobbs* v. *Tom Reed Gold Min. Co.*, 164 Cal. 497; *Klotz* v. *Pan. Am. Match Co.*, 221 Mass. 38; *Tuttle* v. *Iron Nat. Bank*, 170 N. Y. 9.) "The right of inspection of the books and records of a corporation at reasonable times and for proper purposes is a common law privilege incident to the ownership of shares in a corporation." (*State* v *Middlesex Banking Co.*, 87 Conn. 483.)

"The right to examine books of a corporation is purely a personal right depending upon the ownership of capital stock of the corporation." (*In re Hastings*, 170 App. Div. [N. Y.] 756.) At common law the right covered the financial as well as the corporate books, and in some states the same rights are covered by statute. But in most jurisdictions the right is limited to the corporate books disclosing stock ownership, generally the transfer books and stock ledger.

PROMOTER OF CORPORATIONS.—

Promoter Defined.—"In a comprehensive sense 'promoter' includes those who undertake to form a corporation and to procure for it the rights instrumentalities and capital by which it is to carry out the purposes set forth in its charter, and to establish it as fully able to do its business. Their work may begin long before the organization of the corporation, in seeking the opening for a venture and projecting a plan for its development, and may continue after the incorporation by attracting the investment of capital in its securities and providing it with the commercial breath of life." (*Old Dom. Copper Min. etc. Co.* v. *Bigelow*, 203 Mass. 159.)

Nature of the Relation.—Not agency. "A promoter, though he purport to act on behalf of the projected corporation, and not for himself, cannot be treated as agent, because the nominal principal is not then in existence." (*Weatherford etc. R. Co.* v. *Granger*, 86 Tex. 350.)

Fiduciary Relation.—Promoters hold a fiduciary relation to the subscribers and to the corporation. (*Dickerman* v. *No. Trust Co.*, 176 U. S. 182; *Old Dom. Copper Min. etc. Co.* v. *Bigelow*, 203 Mass. 159; *Brewster* v. *Hatch*, 122 N. Y. 349; *Pietsch* v. *Milbrath*, 123 Wis. 647; *Burbank* v. *Dennis*, 101 Cal. 90.) "This trust relationship is necessarily twofold: towards the corporation, as a separate legal entity in respect to corporate property, and towards the shareholder, in respect to his property right in his shares." (*Wills* v. *Nehalem Coal Co.*, 52 Or. 70.)

Contracts of Promoters.—The general and well-settled rule is that contracts made by promoters are not binding on the corporation when formed (*In re Ballou*, 215 Fed. 810; *Peek* v. *Steinberg*, 163 Cal. 127; *Hladover* v. *Paul*, 222 Ill. 254; *Munson* v. *Syracuse etc. R. Co.*, 103 N. Y. 58; *McArthur* v. *Times Printing Co.*, 48 Minn. 319) unless it is made so by statute, article of incorporation, or adopted and ratified by the corporation when it comes into existence (*Whitney* v. *Wyman*, 101 U. S. 392; *Forbes* v. *Thorpe*, 209 Mass. 570; *Wintner* v. *Rosemont Realty Co.*, 101 App. Div. [N. Y.] 90). This rule applies even though the promoter makes contracts for and in the name of the proposed corporation.

DISSOLUTION.—Corporations are dissolved and their corporate existence ceases by:

1. Voluntary dissolution
2. Expiration of charter
3. Breach of corporation laws
4. Bankruptcy (See section on "Bankruptcy, Insolvency, and Receivership")

Voluntary Dissolution.—In a number of states the statutes provide for the voluntary dissolution of corporations. These statutes must be strictly complied with. (*Hening* v. *N. Y. etc. R. Co.*, 105 N. Y. 340.)

The primary requisites are: (1) Consent of the state which granted the charter; (2) Consent of a majority of the stockholders voted at a duly constituted meeting called for that purpose.

A corporation continues its corporate existence until formal consent to dissolve is obtained from the state, even though it has assigned or abandoned its property and powers generally. (*Boston Glass Co.* v. *Langdon*, 24 Pick. [Mass.] 49; *Wyeth Co.* v. *James Co.*, 15 Utah 110; *Packard* v. *Old Colony Ry. Co.*, 168 Mass. 92.)

Expiration of Charter.—A corporation with a prescribed number of years' life dissolves, *ipso facto*, at the expiration of the time limited to its corporate existence. No formal action is required by either the state or the company. (*People* v. *Anderson etc. Co.*, 76 Cal. 190; *Sturges* v. *Vanderbilt*, 73 N. Y. 384.)

Breach of Corporation Laws.—A corporation may be dissolved by the state for misuse (*People* v. *North River Sugar Ref. Co.*, 121 N. Y. 582; *Mumma* v. *Potomac Co.*, 8 Pet. [33 U. S.] 281), or non-use of corporate power. Most states have laws which provide that if a corporation does not organize and transact business under its charter within a prescribed length of time, generally one or two years, its corporate powers shall cease.

Law of Negotiable Instruments

DEFINITION.—"An instrument is called negotiable when the legal title to the instrument itself, and the whole amount of money expressed upon its face, may be transferred from one to another by indorsement and delivered by the holder or by delivery only." (Daniels on Negotiable Instruments.)

DISTINCTIVE CHARACTERISTICS.—Although negotiable instruments are contracts in a broad sense of the word, they possess two distinctive characteristics wherein they differ from ordinary contracts. These are negotiability and the presumption of consideration.

Negotiability.—Negotiability is that quality whereby, (1) the legal title is transferred by indorsement and delivery or by delivery only; and (2) the transferee obtains a good title provided he is a purchaser for value without any notice of the infirmity of the instrument (*Evertson* v. *Bank*, 66 N. Y. 14) even though the title of his transferor was defective. Ordinary contracts pass by assignment, the assignee being subject to all the defenses that may exist between the original parties.

Presumption of Consideration.—Consideration in negotiable instruments is presumed conclusively between remote parties but subject to rebuttal between immediate parties. "Between the immediate parties to any contract evidenced by the drawing, accepting, making or indorsing a bill or note, it may be shown that there was no consideration, as that it was for accommodation; or that the contract failed, or a set-off may be pleaded; but as between other parties remote to each other, none of these defenses is admissible."

CLASSIFICATION OF NEGOTIABLE INSTRUMENTS.—Although there are many kinds of negotiable instruments, they may be broadly classified as: (1) promissory notes, and (2) bills of exchange.

Promissory Notes.—A promissory note is an unconditional written promise signed by the maker, to pay a sum certain in money, at a fixed or definite future time, either to the bearer or to the order of a person designated therein. (Daniels Neg. Inst., § 28; Neg. Inst. Law, N. Y., § 320; Chalmers Bills and Notes, § 291.)

Bills of Exchange.—"A bill of exchange is an unconditional order in writing upon one person by another for the payment of a sum of money absolutely and at all events." (Chalmers Bills and Notes, § 1; Neg. Inst. Law, N. Y., § 210.) "A **check** is a bill of exchange drawn on a bank payable on demand." (Neg. Inst. Law, N. Y., § 321.)

UNIFORM NEGOTIABLE INSTRUMENTS LAW.—The law governing negotiable instruments developed from the custom of merchants and was gradually incorporated into the common law of the land and referred to as the **Law Merchant.** During the past century the common law on negotiable instruments has been codified from time to time in nearly every jurisdiction founded on Anglo-Saxon jurisprudence. At present all the states of the

United States, with the exception of Georgia, have adopted the Uniform Negotiable Instruments Law as devised by the commissioners appointed for that purpose.

"The Negotiable Instrument Act was adopted by the several states for the purpose of establishing uniformity in the law regulating negotiable instruments. Where the act speaks, it controls and its meaning should be ascertained by interpreting the language used, and not by assuming that the common law on the subject should remain unaltered." (*First State Bank* v. *Williams*, 164 Ky. 143.) Although the statute generally known as "The Negotiable Instruments Law" supersedes the common law, it is at times necessary to refer to the common law for a correct interpretation of the statute.

The New York Negotiable Instruments Law is followed with reference to the numbering of sections. Sections of the law are quoted in their entirety in some instances; in others a comprehensive digest adhering as close to the statute as possible is set forth. Court decisions and comments interpreting the statute are given immediately after a number of sections of the law.

GENERAL REQUIREMENTS—FORM OF INSTRUMENT.—

§ 20. *Form of negotiable instrument.*—An instrument to be negotiable must conform to the following requirements:

1. It must be in writing and signed by the maker or drawer.
2. Must contain an unconditional promise or order to pay a sum certain in money.
3. Must be payable on demand, or at a fixed or determinable future time.
4. Must be payable to order or to bearer; and
5. Where the instrument is addressed to a drawee, he must be named or otherwise indicated therein with reasonable certainty.

Writing.—May be with pencil, ink, crayon, or any means to record a signature. (*Brayley* v. *Kelly*, 25 Minn. 160.)

Signature.—May be any mark, initial, name, code or designation a party may choose to adopt and intend to bind himself. (*Palmer* v. *Stephens*, 1 Denio [N. Y.] 471; *Merchants Bank* v. *Spicer*, 6 Wend. [N. Y.] 443.)

Order.—The words **to order, to bearer,** or equivalent words must be used to make an instrument negotiable. (*Wettlaufer* v. *Baxter*, 137 Ky. 362.) An instrument payable to a named person and not payable to order is not negotiable. (*Owens* v. *Blackburn*, 161 App. Div. [N. Y.] 827.) A note payable to the estate of a certain person on his death is not payable to order and is not negotiable. (*Kerr* v. *Smith*, 156 App. Div. [N. Y.] 807.) An instrument wherein either bearer or order of a named person is not indicated, is not a negotiable instrument. (*St. Lawrence Co. Bank* v. *Watkins*, 153 App. Div. [N. Y.] 551.)

CERTAINTY AS TO SUM.—

§ 21. *Certainty as to sum; what constitutes.*—The sum payable is a sum certain within the meaning of this act, although it is to be paid:

1. With interest; or
2. By stated instalments; or
3. By stated instalments, with a provision that upon default in payment of any instalment or of interest, the whole shall become due; or
4. With exchange, whether at a fixed rate or at the current rate; or
5. With costs of collection or an attorney's fee, in case payment shall not be made at maturity.

Sum Certain.—A sum which can be rendered certain by computation.

Instalments.—Negotiability is not affected by instalment payments. (*Riker* v. *Manufacturing Co.*, 14 R. I. 402; *Hodge* v. *Wallace*, 129 Wis. 84.)

Exchange.—Most of the courts have passed on the subject. (*Second Nat. Bank of Aurora* v. *Basnier*, 165 Fed. Rep. 58.)

Attorney's Fees.—A provision in a note to pay attorney's fees in case of non-payment, suit, or after maturity does not destroy its negotiability. (*Valparaiso Farmers Nat. Bank* v. *Sultan Mfg. Co.*, 52 Fed. 191; *Mechanics American Nat. Bank* v. *Coleman*, 204 Fed. Rep. 24.)

"Upon a careful review of the authorities, we can perceive no reason why a note otherwise imbued with all the attributes of negotiability is rendered non-negotiable by a stipulation which is entirely inoperative until after the maturity of the note and its dishonor by the maker. The amount to be paid is certain during the currency of the note as a negotiable instrument and it only becomes uncertain after it ceases to be negotiable by default of the maker in its payment. It is just that the creditor who has incurred an expense in the collection of the debt should be reimbursed by the debtor by whom the action was rendered necessary and the expenses entailed. (*Oppenheimer* v. *Farmers & Mechanics Bank*, 97 Tenn. 19.)

PROMISE TO PAY UNCONDITIONAL.—

§ 22. *When promise is unconditional.*—An unqualified order or promise to pay is unconditional within the meaning of this act, though coupled with:

1. An indication of a particular fund out of which reimbursement is to be made, or a particular account to be debited with the amount; or
2. A statement of the transaction which gives rise to the instrument.

But an order or promise to pay out of a particular fund is not unconditional.

Particular Fund Indicated.—**Payment** out of a particular fund destroys the negotiability of an instrument. (*Munger* v. *Shannon*, 61 N. Y. 251.)

Reimbursement out of a particular fund does not destroy negotiability. (*Smittler* v. *Simon*, 101 N. Y. 554.)

The Test.—The determining factor is whether the drawee is limited to a particular fund or whether he can charge the amount of the bill against the general account of the drawer when the specific fund named in the instrument is insufficient to satisfy the instrument. (*Munger* v. *Shannon*, 61 N. Y. 255.)

Statement of Transaction.—In the instrument does not affect negotiability. Such provisions are generally found in railway equipment notes. (*Chicago Ry. Equip. Co.* v. *Mechanics Nat. Bank*, 136 U. S. 268.)

Contingency in Statement of Transaction.—A note issued containing a statement of the transaction on which it was issued and where the contents of the note are dependent on the outcome of a contract referred to therein is not a negotiable instrument under the law. (*Pope* v. *Lumber Co.*, 162 N. C. 206.)

TIME OF PAYMENT.—

§ 23. *Determinable future time; what constitutes.*—An instrument is payable at a determinable future time, within the meaning of this act, which is expressed to be payable:

1. At a fixed period after date or sight; or
2. On or before a fixed or determinable future time specified therein; or
3. On or at a fixed period after the occurrence of a specified event, which is certain to happen, though the time of happening be uncertain.

An instrument payable upon a contingency is not negotiable, and the happening of the event does not cure the defect.

Certainty of Time.—There must be a fixed or ascertainable future time or a time which can be computed after the occurrence of an event certain to happen although the time of happening may be uncertain.

Fixed Time.—Must be indicated in the instrument. (*Citizens Nat. Bank* v. *Piolett*, 126 Pa. St. 194; *Akley School District* v. *Hall*, 113 U. S. 135.)

Future Time—Events Certain to Happen.—A note payable **at death** or a given number of days or months after death of the maker is a promissory note under the statute, because death is certain although the time is uncertain. (*Crider* v. *Shelby*, 95 Fed. 212; *Hegeman* v. *Moon*, 131 N. Y. 462.)

Contingent Time—Marriage, Age, etc.—Notes payable when a person marries, becomes of age, or when his ship comes in, are not within the statute, as the time depends on a contingency which may never happen. (*Husband* v. *Epling*, 81 Ill. 172; *Sloan* v. *McCarty*, 134 Mass. 245; *Rice* v. *Rice*, 43 App. Div. [N. Y.] 458.)

ADDITIONAL PROVISIONS IN INSTRUMENT.—

§ 24. *Additional provisions not affecting negotiability.*—An instrument which contains an order or promise to do any act in addition to the payment of money is not negotiable. But the negotiable character of an instrument otherwise negotiable is not affected by a provision which:

1. Authorizes the sale of collateral securities in case the instrument be not paid at maturity; or
2. Authorizes a confession of judgment if the instrument be not paid at maturity; or
3. Waives the benefit of any law intended for the advantage or protection of the obligor; or
4. Gives the holder an election to require something to be done in lieu of payment of money.

But nothing in this section shall validate any provision or stipulation otherwise illegal.

Collateral Security.—Negotiability is not affected by a recital in the note that collateral security has been deposited for the security of the note which is to be sold if the note is not paid at maturity. (*Perry* v. *Bigelow*, 128 Mass. 129.)

Judgment Notes.—Are in use in some states. In others, as New York, they are unknown. Confession of judgment is effective only at maturity. Where a note authorizes confession of judgment before maturity, it is not a negotiable instrument under the statute. (*First Nat. Bank of Elgin* v. *Russell*, 124 Tenn. 618.)

Holders' Election.—Where the holder has the election the instrument is within the law. If, however, the maker has the alternative of paying money or something else, the instrument is not negotiable. (*Hosstatter* v. *Wilson*, 36 Barb. [N. Y.] 307.)

OMISSIONS; SEAL; PARTICULAR MONEY; SPECIAL CONSIDERATION.—

§ 25. *Omissions; seal; particular money.*—The validity and negotiable character of an instrument are not affected by the fact that:

1. It is not dated; or
2. Does not specify the value given, or that any value has been given therefor; or
3. Does not specify the place where it is drawn or the place where it is payable; or
4. Bears a seal; or
5. Designates a particular kind of current money in which payment is to be made.

But nothing in this section shall alter or repeal any statute requiring in certain cases the nature of the consideration to be stated in the instrument.

Absence of Date.—See § 32 of the law. (*Church* v. *Stevens*, 107 N. Y. Supp. 310.)

Value Not Stated.—Value presumed. (See Daniels Neg. Inst., § 108.) (*McLeod* v. *Hunter*, 29 Misc. [N. Y.] 558.)

Seal.—Seal is surplusage. Negotiability not affected. (*Chase Nat. Bank* v. *Faurot*, 149 N. Y. 532; *Weeks* v. *Esler*, 143 N. Y. 374.)

Particular Kind of Money.—Negotiability not affected if the instrument is to be paid in gold, or bank notes, or other current money. (*Chrysler* v. *Renais*, 43 N. Y. 209.)

Nature of Consideration in Certain Cases.—Some states require that where an instrument is given for a patent right or a speculative consideration, it shall be so stated in the note. (See Neg. Inst. Law, § 330–332.)

WHEN PAYABLE ON DEMAND.—

§ 26. *When payable on demand.*—An instrument is payable on demand:

1. Where it is expressed to be payable on demand, or at sight, or on presentation; or
2. In which no time for payment is expressed.

Where an instrument is issued, accepted or indorsed when overdue, it is, as regards the person so issuing, accepting or indorsing it, payable on demand.

Where No Time Is Expressed.—The words **on demand** may be added without affecting the instrument. (Byles on Bills and Notes, § 210.)

Overdue Instruments.—A holder of overdue instruments which were negotiated before maturity can sue thereon in his own name. (*French* v. *Jarvis*, 29 Conn. 353.)

WHEN PAYABLE TO ORDER.—

§ 27. *When payable to order.*—The instrument is payable to order where it is drawn payable to the order of a specified person or to him or his order. It may be drawn payable to the order of:

1. A payee who is not maker, drawer or drawee; or
2. The drawer or maker; or
3. The drawee; or
4. Two or more payees jointly; or
5. One or some of several payees; or
6. The holder of an office for the time being.

Where the instrument is payable to order the payee must be named or otherwise indicated therein with reasonable certainty.

Specified Person Only.—An instrument payable to a specified person only without the word **order** is not negotiable. (Byles on Bills and Notes, p. 83.)

Payable to Maker.—Is not complete without indorsement and delivery.

Indorsement in the Alternative.—A note payable to either of two persons may be indorsed by either. (*Passut* v. *Heubner*, 81 Misc. [N. Y.] 14.)

Holder of an Office.—A note payable to a holder of an office or his successor is negotiable. (*Davis* v. *Gorr*, 6 N. Y. 124.)

Payee Indicated.—Need not be by name but may be done in any way to indicate his identity. (*U. S.* v. *White*, 2 Hill 59.)

WHEN PAYABLE TO BEARER.—

§ 28. *When payable to bearer.*—The instrument is payable to bearer:

1. When it is expressed to be so payable; or
2. When it is payable to a person named therein or bearer; or
3. When it is payable to the order of a fictitious or non-existing person, and such fact was known to the person making it so payable; or
4. When the name of the payee does not purport to be the name of any person; or
5. When the only or last indorsement is an indorsement in blank.

Fictitious or Non-existing Persons.—Must be known as such to the maker. A fraudulent representation as to the identity of the payee is not a fictitious person. (*Hartford* v. *Greenwich Bank*, 215 N. Y. 726.) If drawn to an existing person but the maker did not intend that it should be delivered, or indorsed by that person, the instrument is deemed to be payable to a fictitious person and therefore to the bearer. (*Trust Co. of America* v. *Hamilton Bank*, 127 App. Div. [N. Y.] 515.)

Last Indorsement in Blank.—An indorsement in blank on a non-negotiable instrument does not render it negotiable under the law. (*Johnson* v. *Lassiter*, 155 N. C. 47.)

LANGUAGE USED.—

§ 29. *Terms when sufficient.*—The instrument need not follow the language of this act, but any terms are sufficient which clearly indicate an intention to conform to the requirements hereof.

Foreign Language.—An instrument, otherwise sufficient, drawn in a foreign language is within the statute. (*Debebian* v. *Gala*, 64 Md. 262.)

DATE.—

§ 30. *Date, presumption as to.*—Where the instrument or an acceptance or any indorsement thereon is dated, such date is deemed *prima facie* to be the true date of the making, drawing, acceptance or indorsement, as the case may be.

§ 31. *Ante-dated and post-dated.*—The instrument is not invalid for the reason only that it is ante-dated or post-dated, provided this is not done for an illegal or fraudulent purpose. The person to whom an instrument so dated is delivered acquires the title thereto as of the date of delivery.

An instrument **postdated or antedated** for **an illegal purpose** is void to all persons having knowledge of it, otherwise it is good. (*Triphonoff* v. *Sweeney*, 65 Oregon 209; *Brewster* v. *McCardle*, 8 Wend. [N. Y.] 478.)

§ 32. *When date may be inserted.*—Where an instrument expressed to be payable at a fixed period after date is issued undated, or where the acceptance of an instrument payable at a fixed period after sight is undated, any holder may insert therein the true date of issue or acceptance, and the instrument shall be payable accordingly. The insertion of a wrong date does not avoid the instrument in the hands of a subsequent holder in due course; but as to him, the date so inserted is to be regarded as the true date.

Any holder may insert the true date of issue or acceptance of a valid undated instrument. The insertion of the wrong date does not avoid the instrument but the date so inserted is regarded as the true date to subsequent holders in due course. (*Redlich* v. *Doll*, 54 N. Y. 238; *Bank of Houston* v. *Day*, 145 Mo. App. 410.)

PLACE.—A negotiable instrument is presumed to be made at the place it is dated. (*Mfrs. Commercial Co.* v. *Blitz*, 131 App. Div. [N. Y.] 17.)

FILLING BLANKS AFTER DELIVERY.—

§ 33. *Blanks; when may be filled.*—Where the instrument is wanting in any material particular, the person in possession thereof has a *prima facie* authority to complete it by filling up the blanks therein. And a signature on a blank paper delivered by the person making the signature in order that the paper may be converted into a negotiable instrument operates as a *prima facie* authority to fill it up as such for any amount. In order, however, that any such instrument, when completed, may be enforced against any person who became a party thereto prior to its completion, it must be filled up strictly in accordance with the authority given and within a reasonable time. But if any such instrument, after completion, is negotiated to a holder in due course, it is valid and effectual for all purposes in his hands, and he may enforce it as if it had been filled up strictly in accordance with the authority given and within a reasonable time.

There are two different kinds of omissions or blank spaces in negotiable instruments which should be distinguished:

1. Blank spaces of such a nature that the instrument is incomplete until they are filled in.
2. Instruments apparently complete in context but with blank spaces which do not fill the paper.

The statute applies only to omissions indicated of the first kind. As to the second kind the decisions are in conflict. (*Nat. Exchange Bank* v. *Lester*, 194 N. Y. 461; *Yocum* v. *Smith*, 63 Ill. 321, *contra*.)

What, When and How Insertion Is to be Made.—Blanks must be filled up strictly in accordance with authority to complete the instruments in full, which must be done within a reasonable time. (*Weyerhauser* v. *Dunn*, 100 N. Y. 150.) As to a holder in due course an instrument is valid for all purposes where blanks are **filled up** but not in cases where there have been **alterations.** (*First Nat. Bank of Wilkes Barre* v. *Barnum*, 160 Fed. Rep. 245.)

INCOMPLETE INSTRUMENT AND UNDELIVERED.—

§ 34. *Incomplete instrument not delivered.*—Where an incomplete instrument has not been delivered it will not, if completed and negotiated, without authority, be a valid contract in the hands of any holder, as against any person whose signature was placed thereon before delivery.

Stolen Instruments.—An instrument never actually delivered is not negotiated and there can be no recovery on it even in the hands of an innocent purchaser for value. Where an instrument is stolen before delivery, as where a blank check is stolen and then filled out and passed to a holder for value, no recovery can be had on it. (*Linick* v. *Nutting*, 140 App. Div. [N. Y.] 265.)

DELIVERY.—

§ 35. *Delivery; when effectual; when presumed.*—Every contract on a negotiable instrument is incomplete and revocable until delivery of the instrument for the purpose of giving effect thereto. As between immediate parties, and as regards a remote party other than a holder in due course, the delivery, in order to be effectual, must be made either by or under the authority of the party making, drawing, accepting or indorsing, as the case may be; and in such case the delivery may be shown to have been conditional, or for a special purpose only, and not for the purpose of transferring the property in the instrument. But where the instrument is in the hands of a holder in due course, a valid delivery thereof by all parties prior to him so as to make them liable to him is conclusively presumed. And where the instrument is no longer in the possession of a party whose signature appears thereon, a valid and intentional delivery by him is presumed until the contrary is proved.

An instrument has no valid existence until delivered in accordance with the intent of the parties and takes effect from the time of delivery only. (*Grannis* v. *Stevens*, 216 N. Y. 583; *Burr* v. *Beckler*, 264 Ill. 230.)

Conditional Delivery.—Parol evidence between original parties regarding conditional delivery of an instrument is admitted and is not considered as an attempt to modify a written instrument. (*Reynolds* v. *Robinson*, 110 N. Y. 654; *Hill* v. *Hall*, 191 Mass. 253.)

Holder in Due Course.—In the hands of a holder in due course delivery is conclusively presumed. (*Hibbs* v. *Brown*, 190 N. Y. 167.)

AMBIGUOUS CONSTRUCTION.—

§ 36. *Construction where instrument is ambiguous.*—Where the language of the instrument is ambiguous, or there are omissions therein, the following rules of construction apply:

1. Where the sum payable is expressed in words and also in figures and there is a discrepancy between the two, the sum denoted by the words is the sum payable; but if the words are ambiguous or uncertain, references may be had to the figures to fix the amount;

2. Where the instrument provides for the payment of interest, without specifying the date from which interest is to run, the interest runs from the date of the instrument and if the instrument is undated, from the issue thereof;

3. Where the instrument is not dated, it will be considered to be dated as of the time it was issued;

4. Where there is a conflict between the written and printed provisions of the instrument, the written provisions prevail;

5. Where the instrument is so ambiguous that there is doubt whether it is a bill or note, the holder may treat it as either at his election;

6. Where a signature is so placed upon the instrument that it is not clear in what capacity the person making the same intended to sign, he is to be deemed an indorser;

7. Where an instrument containing the words "I promise to pay" is signed by two or more persons, they are deemed to be jointly and severally liable thereon.

Marginal Notes.—On an instrument do not form part of it. (*Schreyer* v. *Hawkes*, 22 Ohio St. 308.)

Interest Rate.—An instrument payable with interest and the rate not specified, the legal rate is presumed. (*Hornstein* v. *Cifuno*, 86 Neb. 103.)

Written and Printed Parts.—Any part of the printed matter necessary for the construction of the written part so as to arrive at a reasonable construction of the instrument as a whole cannot be rejected. (*Miller* v. *Hannibal & St. J. R. R. Co.*, 90 N. Y. 430.) If typewritten and handwritten, the handwritten governs. (*Acme Coal Co.* v. *Northrop Nat. Bank*, 146 Pac. Rep. [Wyo.] 593.)

SIGNATURE AND LIABILITY.—

Trade or Assumed Name.—

§ 37. *Liability of person signing in trade or assumed name.*—No person is liable on the the instrument whose signature does not appear thereon, except as herein otherwise expressly provided. But one who signs in a trade or assumed name will be liable to the same extent as if he had signed in his own name.

"A person may become a party to a bill or note by any mark or designation he chooses to adopt, provided it be used as a substitute for his name and he intends to be bound by it." (*De Witt* v. *Walton*, 9 N. Y. 571.)

Agent's Signature.—

§ 38. *Signature by agent; authority; how shown.*—The signature of any party may be made by a duly authorized agent. No particular form of appointment is necessary for this purpose; and the authority of the agent may be established as in other cases of agency.

§ 39. *Liability of person signing as agent, etc.*—Where the instrument contains or a person adds to his signature words indicating that he signs for or on behalf of a principal, or in a representative capacity, he is not liable on the instrument if he was duly authorized; but the mere addition of words describing him as an agent, or as filling a representative character, without disclosing his principal, does not exempt him from personal liability.

A duly authorized agent binds his principal on a negotiable instrument and he is not personally liable if he discloses his principal. A failure to disclose his principal makes him personally liable.

Descriptive Term.—A person signing an instrument by merely adding a descriptive term such as **trustee, agent,** etc., does not relieve himself from personal liability. (*Casco Nat. Bank* v. *Clarke*, 139 N. Y. 307.)

Corporate Officer.—An officer of a corporation signing a negotiable instrument of the corporation in his own name without a description of his official title or without qualifications is personally liable on the instrument. (*Brooklyn First Nat. Bank* v. *Wallis*, 150 N. Y. 455.)

Procuration.—

§ 40. *Signature by procuration; effect of.*—A signature by "procuration" operates as notice that the agent has but a limited authority to sign, and the principal is bound only in case the agent in so signing acted within the actual limits of his authority.

Such signature is not used much in the United States.

Indorsement by Infant or Corporation.—

§ 41. *Effect of indorsement by infant or corporation.*—The indorsement or assignment of the instrument by a corporation or by an infant passes the property therein, notwithstanding that from want of capacity the corporation or infant may incur no liability thereon.

Forged Signature.—

§ 42. *Forged signature; effect of.*—Where a signature is forged or made without authority of the person whose signature it purports to be, it is wholly inoperative, and no right to retain the instrument, or to give a discharge therefor, or to enforce payment thereof against any party thereto, can be acquired through or under such signature, unless the party against whom it is sought to enforce such right is precluded from setting up the forgery or want of authority.

Case under the statute. (*Seaboard Nat. Bank* v. *Bank of America*, 193 N. Y. 26.)

Consideration.—

§ 50. *Presumption of consideration.*—Every negotiable instrument is deemed *prima facie* to have been issued for a valuable consideration; and every person whose signature appears thereon to have become a party thereto for value.

Words **value received** are surplusage. Their omission does not impair negotiability. (*McLeod* v. *Hunter*, 29 Misc. [N. Y.] 559.) These words are important in non-negotiable instruments as they amount to an admission that the instrument was issued for a consideration. (*Owen* v. *Blackburn*, 161 App. Div. [N. Y.] 827.)

§ 51. *Consideration, what constitutes.*—Value is any consideration sufficient to support a simple contract. An antecedent or pre-existing debt constitutes value; and is deemed such whether the instrument is payable on demand or at a future time.

"A valuable consideration may consist of some right, interest, profit or benefit accruing to one party, or some forbearance, detriment, loss or responsibility given, suffered or undertaken by the other." (*St. Mark's Church* v. *Teed*, 120 N. Y. 583.)

Exchange of Notes.—One promissory note constitutes a good consideration for the other. (*Mehlinger* v. *Harriman*, 185 Mass. 245; *State Bank* v. *Smith*, 155 N. Y. 185.)

HOLDER FOR VALUE.—

§ 52. *What constitutes holder for value.*—Where value has at any time been given for the instrument, the holder is deemed a holder for value in respect to all parties who became such prior to that time.

§ 53. *When lien on instrument constitutes holder for value.*—Where the holder has a lien on the instrument, arising either from contract or by implication of law, he is deemed a holder for value to the extent of his lien.

§ 54. *Effect of want of consideration.*—Absence or failure of consideration is matter of defense as against any person not a holder in due course; and partial failure of consideration is a defense *pro tanto*, whether the failure is an ascertained and liquidated amount or otherwise.

Want of consideration does not affect negotiability. (*Dingman* v. *Amsink*, 77 Pa. St. 114.)

Exchange of Notes.—In an exchange of notes, one note is a consideration for the other and neither party is regarded as an accommodation party. (*State Bank* v. *Smith*, 155 N. Y. 185.)

LIABILITY OF ACCOMMODATION PARTY.—

§ 55. *Liability of accommodation party.*—An accommodation party is one who has signed the instrument as maker, drawer, acceptor or indorser, without receiving value therefor,

and for the purpose of lending his name to some other person. Such a person is liable on the instrument to a holder for value, notwithstanding such holder at the time of taking the instrument knew him to be only an accommodation party.

"A mutual exchange of notes will amount to a sufficient consideration so that the notes will not be regarded as accommodation paper." (*Rice* v. *Grange*, 131 N. Y. 149.)

Corporations.—Corporations are without power to become accommodation parties. (*Nat. Bank of Commerce* v. *Atkinson*, 55 Fed. Rep. 465; *Jacobus* v. *Jamestown Mantel Co.*, 211 N. Y. 154.)

WHAT CONSTITUTES NEGOTIATION.—

§ 60. *What constitutes negotiation.*—An instrument is negotiated when it is transferred from one person to another in such manner as to constitute the transferee the holder thereof. If payable to bearer it is negotiated by delivery; if payable to order it is negotiated by the indorsement of the holder completed by delivery.

Necessity for Delivery.—Indorsement without delivery conveys no title. (*Middleton* v. *Griffith*, 57 N. J. L. 442.)

INDORSEMENT.—

§ 61. *Indorsement; how made.*—The indorsement must be written on the instrument itself or upon a paper attached thereto. The signature of the indorser, without additional words, is a sufficient indorsement.

Place of indorsement is usually on the back of an instrument but may be anywhere on it. (*Hains* v. *Dubois*, 29 N. J. L. 259; Neg. Ins. Law, N. Y., § 36.)

Indorsement made by **rubber stamp signature,** by one having authority with intent to indorse the instrument, is a valid indorsement. (*Evans* v. *Freeman*, 142 N. C. 61.)

The holder has the burden of proving the genuineness of each indorsement necessary to support his **title.** (*Hathaway* v. *County of Delaware*, 185 N. Y. 374.)

§ 62. *Indorsement must be of entire instrument.*—The indorsement must be an indorsement of the entire instrument. An indorsement, which purports to transfer to the indorsee a part only of the amount payable, or which purports to transfer the instrument to two or more indorsees severally, does not operate as a negotiation of the instrument. But where the instrument has been paid in part, it may be indorsed as to the residue.

§ 63. *Kinds of indorsement.*—An indorsement may be either special or in blank; and it may also be either restrictive or qualified, or conditional.

§ 64. *Special indorsement; indorsement in blank.*—A special indorsement specifies the person to whom, or to whose order the instrument is to be payable; and the indorsement of such indorsee is necessary to the further negotiation of the instrument. An indorsement in blank specifies no indorsee, and an instrument so indorsed is payable to bearer, and may be negotiated by delivery.

§ 65. *Blank indorsement; how changed to special indorsement.*—The holder may convert a blank indorsement into a special indorsement by writing over the signature of the indorser in blank any contract consistent with the character of the indorsement.

§ 66. *When indorsement restrictive.*—An indorsement is restrictive, which either:

1. Prohibits the further negotiation of the instrument; or
2. Constitutes the indorsee the agent of the indorser; or
3. Vests the title in the indorsee in trust for or to the use of some other person.

But the mere absence of words implying power to negotiate does not make an indorsement restrictive.

Checks and drafts deposited with banks for collection are generally indorsed under § 66–2.

An illustration of **restrictive indorsement** under § 66–3 is: "Pay X for account of Y." Title passes to X but the indorsement is limited to the

extent that it gives notice that the instrument cannot be negotiated by X for his own benefit. (*Hook* v. *Pratt*, 78 N. Y. 371.)

§ 67. *Effect of restrictive indorsement; rights of indorsee.*—A restrictive indorsement confers upon the indorsee the right:

1. To receive payment of the instrument;
2. To bring any action thereon that the indorser could bring;
3. To transfer his rights as such indorsee, where the form of the indorsement authorizes him to do so.

But all subsequent indorsees acquire only the title of the first indorsee under the restrictive indorsement.

§ 68. *Qualified indorsement.*—A qualified indorsement constitutes the indorser a mere assignor of the title to the instrument. It may be made by adding to the indorser's signature the words "without recourse" or any words of similar import. Such an indorsement does not impair the negotiable character of the instrument.

Qualified indorsement may be made by adding to the indorsement **"without recourse"** or words of similar import. (*Schmidt* v. *Pegg*, 172 Mich. 160.) A qualified or restrictive indorsement does not impair the **negotiable character** of the instrument. (*Page* v. *Ford*, 65 Ore. 450.)

§ 69. *Conditional indorsement.*—Where an indorsement is conditional, a party required to pay the instrument may disregard the condition and make payment to the indorsee or his transferee, whether the condition has been fulfilled or not. But any person to whom an instrument so indorsed is negotiated will hold the same, or the proceeds thereof subject to the rights of the person indorsing conditionally.

§ 70. *Indorsement of instrument payable to bearer.*—Where an instrument, payable to bearer, is indorsed specially, it may nevertheless be further negotiated by delivery; but the person indorsing specially is liable as indorser to only such holders as make title through his indorsement.

§ 71. *Indorsement where payable to two or more persons.*—Where an instrument is payable to the order of two or more payees or indorsees who are not partners, all must indorse, unless the one indorsing has authority to indorse for the others.

(*Martz* v. *State Nat. Bank*, 147 App Div. [N. Y.] 250.)

§ 72. *Effect of instrument drawn or indorsed to a person as cashier.*—Where an instrument is drawn or indorsed to a person as "cashier" or other fiscal officer of a bank or corporation, it is deemed *prima facie* to be payable to the bank or corporation of which he is such officer; and may be negotiated by either the indorsement of the bank or corporation, or the indorsement of the officer.

(*Quincy Mut. Fire Ins. Co.* v. *Int. Trust Co.*, 217 Mass. 370; *Johnson* v. *Buffalo Center State Bank*, 134 Iowa 731.)

§ 73. *Indorsement where name is misspelled, et cetera.*—Where the name of a payee or indorsee is wrongly designated or misspelled, he may indorse the instrument as therein described, adding, if he think fit, his proper signature.

§ 74. *Indorsement in representative capacity.* Where any person is under obligation to indorse in a representative capacity, he may indorse in such terms as to negative personal liability.

As to **executor or administrator,** see *Smittler* v. *Simon*, 101 N. Y. 554. As to others, see *Chelsea Exchange Bank* v. *First U. P. Church*, 80 Misc. [N. Y.] 616.

§ 75. *Time of indorsement; presumption.*—Except where an indorsement bears date after the maturity of the instrument, every negotiation is deemed *prima facie* to have been effected before the instrument was overdue.

§ 76. *Place of indorsement; presumption.*—Except where the contrary appears every indorsement is presumed *prima facie* to have been made at the place where the instrument is dated.

The importance of this section is realized when it is recalled that an indorsement not alone transfers the instrument but is also a new contract embodying the contents of the instrument. As, for instance, a note made in

one state and subsequently indorsed in another becomes a contract governed by the laws of the latter state. (*Chemical Nat. Bank* v. *Kellogg*, 183 N. Y. 92; *Glidden* v. *Chamberlin*, 167 Mass. 486.)

§ 77. *Continuation of negotiable character.*—An instrument negotiable in its origin continues to be negotiable until it has been restrictively indorsed or discharged by payment or otherwise.

§ 78. *Striking out indorsement.*—The holder may at any time strike out any indorsement which is not necessary to his title. The indorser whose indorsement is struck out, and all indorsers subsequent to him, are thereby relieved from liability on the instrument.

§ 79. *Transfer without indorsement; effect of.*—Where the holder of an instrument payable to his order transfers it for value without indorsing it, the transfer vests in the transferee such title as the transferrer had therein, and the transferee acquires, in addition, the right to have the indorsement of the transferrer. But for the purpose of determining whether the transferee is a holder in due course, the negotiation takes effect as of the time when the indorsement is actually made.

§ 80. *When prior party may negotiate instrument.*—Where an instrument is negotiated back to a prior party, such party may, subject to the provisions of this act, reissue and further negotiate the same. But he is not entitled to enforce payment thereof against any intervening party to whom he was personally liable.

RIGHTS OF HOLDER.—

To sue.—

§ 90. *Right of holder to sue; payment.*—The holder of a negotiable instrument may sue thereon in his own name; and payment to him in due course discharges the instrument. (*Lowell* v. *Brickford*, 201 Mass. 543; *Hathaway* v. *County of Delaware*, 185 N. Y. 374.)

HOLDER IN DUE COURSE.—

§ 91. *What constitutes a holder in due course.*—A holder in due course is a holder who has taken the instrument under the following conditions:

1. That it is complete and regular upon its face;
2. That he became the holder of it before it was overdue, and without notice that it had been previously dishonored, if such were the fact;
3. That he took it in good faith and for value;
4. That at the time it was negotiated to him he had no notice of any infirmity in the instrument or defect in the title of the person negotiating it.

As to completeness and regularity see *Hunter* v. *Allen*, 127 App. Div. [N. Y.] 572.

Negotiable instruments acquired **after maturity** become subject to the same defenses as if non-negotiable. (*Cole* v. *Stearns*, 162 N. Y. 637.)

A **bank discounting paper** and merely placing amount to the credit of customer does not become a holder in due course. (*Citizens State Bank* v. *Cowles*, 180 N. Y. 346.) But if the sum so credited is drawn on and checked out, the bank becomes a holder in due course. (*Merchants Bank* v. *Santa Maria Sugar Co.*, 162 App. Div. [N. Y.] 248.)

A gift of a negotiable instrument does not make the donee a holder in due course. (*Greer* v. *Orchard*, 175 Mo. App. 494.)

§ 92. *When person not deemed holder in due course.*—Where an instrument payable on demand is negotiated an unreasonable length of time after its issue, the holder is not deemed a holder in due course.

What constitutes a **reasonable time** depends on the facts in each case. (*Commercial Nat. Bank* v. *Zimmermann*, 185 N. Y. 310.)

§ 93. *Notice before full amount paid.*—Where the transferee receives notice of any infirmity in the instrument or defect in the title of the person negotiating the same before he has paid the full amount agreed to be paid therefor, he will be deemed a holder in due course only to the extent of the amount theretofore paid by him.

§ 94. *When title defective.*—The title of a person who negotiates an instrument is defective within the meaning of this act when he obtained the instrument, or any signature thereto, by fraud, duress, or force and fear, or other unlawful means, or for an illegal consideration, or when he negotiates it in breach of faith, or under such circumstances as amount to a fraud.

§ 95. *What constitutes notice of defect.*—To constitute notice of an infirmity in the instrument or defect in the title of the person negotiating the same, the person to whom it is negotiated must have had actual knowledge of the infirmity or defect, or knowledge of such facts that his action in taking the instrument amounted to bad faith.

For **actual notice,** see cases: *Swift* v. *Smith*, 102 U. S. 442; *Jarvis* v. *Manhattan Beach Co.*, 148 N. Y. 652; *Interboro Brewing Co.* v. *Doyle*, 165 App. Div. [N. Y.] 646.

Inquiry.—The transferee is not required to make inquiry. (*Cheever* v. *Pittsburgh etc. R. Co.*, 150 N. Y. 59.)

A holder's knowledge of the poor **financial condition of the maker** is not sufficient to put him on notice of a defect, as he has a right to rely on the indorsements. (*Baruch* v. *Buckley*, 167 App. Div. [N. Y.] 113.)

A **purchase at discount,** even though it is large, is not sufficient to deprive the holder of rights of a holder in due course. (*Ham* v. *Merrett*, 150 Ky. 11.) If the discount is very large and there are other factors, they may be considered together to determine if he became a holder for value in good faith. (*Sabine* v. *Paine*, 166 App. Div. [N. Y.] 10.)

Negotiable instrument issued **by a corporate officer** for his personal benefit or use is *prima facie* unlawful and unless authorized the person taking such paper does so at his peril. (*Wilson* v. *Metropolitan Ry. Co.*, 120 N. Y. 145.)

Negotiable instrument issued under **duress** is void. (*Magoon* v. *Reber*, 76 Wis. 392.)

RIGHTS OF HOLDER IN DUE COURSE.—

§ 96. *Rights of holder in due course.*—A holder in due course holds the instrument free from any defect of title of prior parties and free from defenses available to prior parties among themselves, and may enforce payment of the instrument for the full amount thereof against all parties liable thereon.

Stolen Securities.—An incomplete instrument stolen before negotiated is not valid in the hands of a holder. (*Limmick* v. *Nutting*, 140 App. Div. [N. Y.] 265.) Where, however, the instrument has been negotiated, an innocent purchaser for value becomes a holder in due course even if his title is derived from one who has stolen the instrument after issue. (*Mass. Nat. Bank* v. *Snow*, 187 Mass. 160.) (See note under § 34.)

Instruments Issued in Violation of Law.—The decisions of the courts interpreting this section are in conflict. The predominating rule seems to hold that a negotiable instrument issued in violation of some statute and void between original parties is, however, good and enforcible against the maker if in the hands of a holder in due course. (*Wirt* v. *Stubblefield*, 17 App. Case [D. C.] 283.)

Probably the weight of authority is to construe this section to meet the requirements of commerce as expressed by Judge Van: "The business of the country is done so largely by means of commercial paper that the interests of commerce require that a promissory note, fair on its face, should be as negotiable as a government bond. Every restriction upon the circulation of negotiable papers is an injury to the state, for it tends to derange trade and hinders the transaction of business." (*Chemical Nat. Bank* v. *Kellogg*, 183 N. Y. 92.) Courts of other states hold that a negotiable instrument issued in violation of law is invalid against the maker even in the hands of

innocent purchasers on the ground of public policy. (*Alexander* v. *Hazelrigg* 123 Ky. 677.)

Instruments Purchased Under Par.—"We are of opinion that a purchaser of negotiable security before maturity, in cases where he is not personally chargeable with fraud, is entitled to recover its full amount against its maker, though he may have paid less than par value whatever may have been the original infirmity." (*Cromwell* v. *County of Sac.*, 96 U. S. 51.)

When Subject to Original Defenses.—

§ 97. *When subject to original defenses.*—In the hands of any holder other than a holder in due course, a negotiable instrument is subject to the same defenses as if it were non-negotiable. But a holder who derives his title through a holder in due course, and who is not himself a party to any fraud or illegality affecting the instrument, has all the rights of such former holder in respect of all parties prior to the latter.

Who is Deemed Holder in Due Course.—

§ 98. *Who deemed holder in due course.*—Every holder is deemed *prima facie* to be a holder in due course; but when it is shown that the title of any person who has negotiated the instrument was defective, the burden is on the holder to prove that he or some person under whom he claims acquired the title as a holder in due course. But the last-mentioned rule does not apply in favor of a party who became bound on the instrument prior to the acquisition of such defective title.

Stolen Instruments.—Burden of proof is on the holder that he obtained the instrument from a holder in due course. (*Lawyers Title etc. Co.* v. *Jones*, 113 App. Div. [N. Y.] 105.)

LIABILITY OF MAKER.—

§ 110. *Liability of maker.*—The maker of a negotiable instrument by making it engages that he will pay it according to its tenor; and admits the existence of the payee and his then capacity to indorse.

The maker is primarily liable even if he signed only for **accommodation.** (*Richards* v. *Market Exchange Bank*, 81 Ohio State 348.)

Where an indorser deposited security for the payment of the instrument, this is not a defense for the maker. (*People's Nat. Bank* v. *Rice*, 149 App. Div. [N. Y.] 18.)

If an assumed or trade name is used for an existing payee, the maker is estopped from setting up that the payee is fictitious. (*Jones* v. *Home Furn. Co.*, 9 App. Div. [N. Y.] 103.)

LIABILITY OF DRAWER.—

§ 111. *Liability of drawer.*—The drawer by drawing the instrument admits the existence of the payee and his then capacity to indorse; and engages that on due presentment the instrument will be accepted and paid, or both, according to its tenor, and that if it be dishonored and the necessary proceedings on dishonor be duly taken, he will pay the amount thereof to the holder, or to any subsequent indorser who may be compelled to pay it. But the drawer may insert in the instrument an express stipulation negativing or limiting his own liability to the holder.

LIABILITY OF ACCEPTOR.—

§ 112. *Liability of acceptor.*— The acceptor by accepting the instrument engages that he will pay it according to the tenor of his acceptance; and admits:

1. The existence of the drawer, the genuineness of his signature, and his capacity and authority to draw the instrument; and
2. The existence of the payee and his then capacity to indorse.

The acceptor is estopped from setting up **incapacity of drawer** where the instrument is drawn by an infant, married woman, or a corporation without such power. (*Cowton* v. *Wickersham*, 54 Pa. St. 302: *Jones* v. *Darch*, 4 Price 300.)

Drawee cannot hold the drawer where acceptance was for **accommodation** until he (the drawee) has paid the instrument. (*Christian* v. *Keen*, 80 Va. 369.)

WHO IS DEEMED INDORSER?—

§ 113. *When person deemed indorser.*—A person placing his signature upon an instrument otherwise than as maker, drawer or acceptor is deemed to be an indorser, unless he clearly indicates by appropriate words his intention to be bound in some other capacity.

Intention to be bound otherwise must be clear and distinct by appropriate language and cannot be inferred by equivocal language or conduct. (*McDonald* v. *Luckenbach*, 170 Fed. Rep. 434.)

Individual liability is not incurred by an **officer** indorsing as an officer of the corporation. (*McDonald* v. *Luckenbach*, 170 Fed. Rep. 434.)

The rule is that a **partner** indorsing in his individual capacity, different than or in addition to his partnership indorsement, incurs a double liability from the two separate and distinct indorsements made by him. (*Fourth Nat. Bank* v. *Mead*, 216 Mass. 521.)

IRREGULAR INDORSER.—

§ 114. *Liability of irregular indorser.*—Where a person, not otherwise a party to an instrument, places thereon his signature in blank before delivery, he is liable as indorser in accordance with the following rules:

1. If the instrument is payable to the order of a third person, he is liable to the payee and to all subsequent parties.
2. If the instrument is payable to the order of the maker or drawer, or is payable to bearer, he is liable to all parties subsequent to the maker or drawer.
3. If he signs for the accommodation of the payee he is liable to all parties subsequent to the payee.

WARRANTY WHERE NEGOTIATION BY DELIVERY.—

§ 115. *Warranty where negotiation by delivery, et cetera.*—Every person negotiating an instrument by delivery or by a qualified indorsement, warrants:

1. That the instrument is genuine and in all respects what it purports to be;
2. That he has a good title to it;
3. That all prior parties had capacity to contract;
4. That he has no knowledge of any fact which would impair the validity of the instrument or render it valueless.

But when the negotiation is by delivery only, the warranty extends in favor of no holder other than the immediate transferee. The provisions of subdivision three of this section do not apply to persons negotiating public or corporate securities, other than bills and notes.

Implied and Express Warranties.—"It has long been the settled law of this State, and now been made law by statute, that every person negotiating a negotiable instrument by delivery or by qualified indorsement, warrants that the instrument is genuine and in all respects what it purports to be." (*Gaboy* v. *Doane*, 66 App. Div. [N. Y.] 507.) The warranties referred to in the statute are implied warranties. The parties may draw such express warranties as they may choose. (*Bell* v. *Dagg*, 60 N. Y. 528.)

Knowledge of Defect.—If an indorser knows an instrument is void he will be liable to the purchaser. (*Littauer* v. *Goldman*, 72 N. Y. 506.)

GENERAL INDORSER.—

§ 116. *Liability of general indorser.*—Every indorser who indorses without qualification, warrants to all subsequent holders in due course:

1. The matter and things mentioned in subdivisions one, two and three of the next preceding section; and

2. That the instrument is at the time of his indorsement valid and subsisting.

And, in addition, he engages that on due presentment, it shall be accepted or paid, or both, as the case may be, according to its tenor, and that if it be dishonored, and the necessary proceedings on dishonor be duly taken, he will pay the amount thereof to the holder, or to any subsequent indorser who may be compelled to pay it.

The warranties are in favor of subsequent holders only.

Indorsement guaranteed on back of an instrument guarantees the entire instrument and all indorsements except the signature of the drawer. (*N. Y. Produce Ex. Bank* v. *Twelfth Ward Bank*, 135 App. Div. 52.)

It is beyond the power of an **executor** to bind the estate of which he is executor by a contract of indorsement. (*Schmittler* v. *Simon*, 101 N. Y. 554.)

LIABILITY OF INDORSERS.—

§ 117. *Liability of indorser where paper negotiable by delivery.*—Where a person places his indorsement on an instrument negotiable by delivery he incurs all the liabilities of an indorser.

§ 118. *Order in which indorsers are liable.*—As respects one another, indorsers are liable *prima facie* in the order in which they indorse; but evidence is admissible to show that as between or among themselves they have agreed otherwise. Joint payees or joint indorsees who indorse are deemed to indorse jointly and severally.

The rule applies to **accommodation indorsers** as well as others.

LIABILITY OF AGENT.—

§ 119. *Liability of agent or broker.*—Where a broker or other agent negotiates an instrument without indorsement, he incurs all the liabilities prescribed by section one hundred and fifteen of this act, unless he discloses the name of his principal, and the fact that he is acting only as agent.

PRESENTMENT FOR PAYMENT.—

§ 130. *Effect of want of demand on principal debtor.*—Presentment for payment is not necessary in order to charge the person primarily liable on the instrument; but if the instrument is, by its terms, payable at a special place, and he is able and willing to pay it there at maturity and has funds there available for that purpose, such ability and willingness are equivalent to a tender of payment upon his part. But except as herein otherwise provided, presentment for payment is necessary in order to charge the drawer and indorsers.

The rule in the United States is that although the instrument is payable at a particular place, it is not necessary, to recover from the maker, to prove presentment or demand for payment at such a place. However, failure to present at that place relieves the party primarily liable from costs or damages if he was ready, able, and willing to make payment at that place.

PRESENTMENT WHERE NOT PAYABLE ON DEMAND.—

§ 131. *Presentment where instrument is not payable on demand.*—Where the instrument is not payable on demand, presentment must be made on the day it falls due. Where it is payable on demand, presentment must be made within a reasonable time after its issue, except that in case of a bill of exchange, presentment for payment will be sufficient if made within a reasonable time after the last negotiation thereof.

Reasonable time depends on circumstances in each case. No definite rule laid down by the courts. Usage of trade seems to govern. As banks generally make paper payable within 4 months, this is deemed a reasonable time to present paper payable on demand. (*Frazee* v. *Phoenix Nat. Bank*. 161 Ky. 175.) In Massachusetts, in the absence of usage of trade a reasonable time to present demand instruments in order to hold indorsers is 60 days. (*Merritt* v. *Jackson*, 181 Mass. 67.)

WHAT CONSTITUTES SUFFICIENT PRESENTMENT.—

§ 132. *What constitutes a sufficient presentment.*—Presentment for payment, to be sufficient, must be made:

1. By the holder, or by some person authorized to receive payment on his behalf;
2. At a reasonable hour on a business day;
3. At a proper place as herein defined;
4. To the person primarily liable on the instrument, or if he is absent or inaccessible, to any person found at the place where the presentment is made.

Time of Day.—Instruments payable at a bank must be presented within banking hours; at a place of business within usual business hours; at a residence before the usual hours of rest, as late as 9 P.M. having been held a reasonable hour. (*Farnsworth* v. *Allen*, 4 Gray 453.)

PLACE OF PRESENTMENT.—

§ 133. *Place of presentment.*—Presentment for payment is made at the proper place:
1. Where a place of payment is specified in the instrument and it is there presented;
2. Where no place of payment is specified, but the address of the person to make payment is given in the instrument and it is there presented;
3. Where no place of payment is specified and no address is given and the instrument is presented at the usual place of business or residence of the person to make payment.
4. In any other case if presented to the person to make payment wherever he can be found, or if presented at his last known place of business or residence.

Where No Place Specified.—The maker's usual place of business is sufficient even if no one is there to answer, as the maker is bound to have a person there to answer and pay his note if presented. (*Baumgardner* v. *Rieves*, 35 Pa. St. 250.)

INSTRUMENT TO BE EXHIBITED.—

§ 134. *Instrument must be exhibited.*—The instrument must be exhibited to the person from whom payment is demanded, and when it is paid must be delivered up to the party paying it.

Demand over telephone is not sufficient as it does not comply with the statute. (*Gilpin* v. *Savage*, 201 N. Y. 167.)

Request for payment in an informal manner not intended, as presentment is insufficient. (*State of N. Y. Nat. Bank* v. *Kennedy*, 145 App. Div. [N. Y.] 669.)

PRESENTMENT WHEN PAYABLE AT BANK.—

§ 135. *Presentment where instrument payable at bank.*—Where the instrument is payable at a bank, presentment for payment must be made during banking hours, unless the person to make payment has no funds there to meet it at any time during the day, in which case presentment at any hour before the bank is closed on that day is sufficient.

Where bank is closed and in hands of receiver, demand on receiver personally is not necessary. Instruments, however, may be presented at the bank (*Schlesinger* v. *Schultz*, 110 App. Div. [N. Y.] 356) or as set forth in § 133.

PRESENTMENT WHERE PRINCIPAL DEBTOR IS DEAD.—

§ 136. *Presentment where principal debtor is dead.*—Where the person primarily liable on the instrument is dead, and no place of payment is specified, presentment for payment must be made to his personal representative, if such there be, and if with the exercise of reasonable diligence, he can be found.

As to **reasonable diligence** see *Reed* v. *Spear*, 107 App. Div. [N. Y.] 144.

Although the holder is relieved from making presentment under this section, it does not relieve him from giving notice of dishonor to the **indorsers** to hold them. (*Reed* v. *Spear*, 107 App. Div. [N. Y.] 144.)

PRESENTMENT TO PARTNERS OR JOINT DEBTORS.—

§ 137. *Presentment to persons liable as partners.*—Where the persons primarily liable on the instrument are liable as partners, and no place of payment is specified, presentment for payment may be made to any one of them, even though there has been a dissolution of the firm.

§ 138. *Presentment to joint debtors.*—Where there are several persons not partners, primarily liable on the instrument, and no place of payment is specified, presentment must be made to them all.

WHEN PRESENTMENT NOT REQUIRED TO CHARGE DRAWER.—

§ 139. *When presentment not required to charge the drawer.*—Presentment for payment is not required in order to charge the drawer where he has no right to expect or require that the drawee or acceptor will pay the instrument.

Although the drawer has no funds in the hands of the drawee, presentment is not dispensed with. (*Life Ins. Co.* v. *Pendleton*, 112 U. S. 708.)

WHEN PRESENTMENT NOT REQUIRED TO CHARGE INDORSER.—

§ 140. *When presentment not required to charge the indorser.*—Presentment for payment is not required in order to charge an indorser where the instrument was made or accepted for his accommodation, and he has no reason to expect that the instrument will be paid if presented.

DELAY IN PRESENTMENT.—

§ 141. *When delay in making presentment is excused.*—Delay in making presentment for payment is excused when the delay is caused by circumstances beyond the control of the holder and not imputable to his default, misconduct or negligence. When the cause of delay ceases to operate, presentment must be made with reasonable diligence.

Sickness is not an excuse for failure to present a note for payment at the proper time, unless the illness is so severe that the holder cannot direct another to present it. In that case presentment must be made as soon as the disability is removed. (*Wilson* v. *Senier*, 14 Wis. 380.)

WHEN PRESENTMENT IS DISPENSED WITH.—

§ 142. *When presentment may be dispensed with.*—Presentment for payment is dispensed with:

1. Where, after the exercise of reasonable diligence presentment as required by this act cannot be made;
2. Where the drawee is a fictitious person;
3. By waiver of presentment express or implied.

Insolvency of maker or acceptor does not dispense with the necessity for presentment. (*J. W. O'Bannan Co.* v. *Curran*, 129 App. Div. [N. Y.] 90.)

DISHONOR BY NON-PAYMENT.—

§ 143. *When instrument dishonored by non-payment.*—The instrument is dishonored by non-payment when:

1. It is duly presented for payment and payment is refused or cannot be obtained; or
2. Presentment is excused and the instrument is overdue and unpaid.

§ 144. *Liability of person secondarily liable, when instrument dishonored.*—Subject to the provisions of this act, when the instrument is dishonored by non-payment, an immediate right of recourse to all parties secondarily liable thereon, accrues to the holder.

TIME OF MATURITY.—

§ 145. *Time of maturity.*—Every negotiable instrument is payable at the time fixed therein without grace. When the day of maturity falls upon Sunday or a holiday, the instrument is payable on the next succeeding business day. Instruments falling due or becoming payable on Saturday are to be presented for payment on the next succeeding business day, except that instruments payable on demand may, at the option of the holder, be presented for payment before twelve o'clock noon on Saturday when that entire day is not a holiday.

§ 146. *Time; how computed.*—Where the instrument is payable at a fixed period after date, after sight, or after the happening of a specified event, the time of payment is determined by excluding the day from which the time is to begin to run, and by including the date of payment.

PAYABLE AT BANK.—

§ 147. *Rule where instrument payable at bank.*—Where the instrument is made payable at a bank it is equivalent to an order to the bank to pay the same for the account of the principal debtor thereon.

PAYABLE IN DUE COURSE.—

§ 148. *What constitutes payment in due course.*—Payment is made in due course when it is made at or after the maturity of the instrument to the holder thereof in good faith and without notice that his title is defective.

Possession of the instrument is *prima facie* authority to demand payment. The maker or drawer has a duty to demand the production of the instrument before paying it. (*Loizeaux* v. *Fremder*, 123 Wis. 193.)

NOTICE OF DISHONOR.—

§ 160. *To whom notice of dishonor must be given.*—Except as herein otherwise provided, when a negotiable instrument has been dishonored by non-acceptance or non-payment, notice of dishonor must be given to the drawer and to each indorser, and any drawer or indorser to whom such notice is not given is discharged.

To hold an **accommodation indorser** he must be given notice of dishonor the same as any other indorser. (*Perry* v. *Taylor*, 148 N. C. 362.)

Where a note given to a **bank** for collection is dishonored, it is the duty of the bank to give notice to its customer. (*Shea* v. *Vahey*, 215 Mass. 80.)

Guarantors do not come under the rule requiring notice. (*Brown* v. *Curtiss*, 2 N. Y. 225.)

§ 161. *By whom given.*—The notice may be given by or on behalf of the holder, or by or on behalf of any party to the instrument who might be compelled to pay it to the holder, and who, upon taking it up, would have a right to reimbursement from the party to whom the notice is given.

"A notice by a **stranger** to the instrument is not sufficient." (*Lawrence* v. *Miller*, 16 N. Y. 235.)

§ 162. *Notice given by agent.*—Notice of dishonor may be given by an agent either in his own name or in the name of any party entitled to give notice, whether that party be his principal or not.

Banks having instruments for collection act as agents and have authority to receive and give notice on behalf of the holders of the instruments. (*Kelly* v. *Theiss*, 78 N. Y. S. 1050; *West River Bank* v. *Taylor*, 34 N. Y. 128.)

A **notary** who is an agent for the owner of a negotiable instrument may give notice even though acting in his official capacity. (*Lawrence* v. *Miller*, 16 N. Y. 235.)

§ 163. *Effect of notice given on behalf of holder.*—Where notice is given by or on behalf of the holder, it enures for the benefit of all subsequent holders and all prior parties who have a right of recourse against the party to whom it is given.

A **holder** need not give notice to anyone but his immediate indorser. (*West River Bank* v. *Taylor*, 34 N. Y. 128.)

§ 164. *Effect where notice is given by party entitled thereto.*—Where notice is given by or on behalf of a party entitled to give notice, it enures for the benefit of the holder and all parties subsequent to the party to whom notice is given.

§ 165. *When agent may give notice.*—Where the instrument has been dishonored in the hands of an agent, he may either himself give notice to the parties liable thereon, or he may give notice to his principal. If he give notice to his principal, he must do so within the same time as if he were the holder, and the principal, upon the receipt of such notice, has himself the same time for giving notice as if the agent had been an independent holder.

Undue delay by an agent in giving notice to his principal discharges prior indorsers. (*Rosson* v. *Carroll*, 90 Tenn. 90.)

A **bank** receiving an instrument for collection fulfils its duty to the depositor by giving proper notice of dishonor in time to enable its customer to give notice to prior indorsers. (*Brill* v. *Jefferson Bank*, 159 App. Div. [N. Y.] 461.)

§ 166. *When notice sufficient.*—A written notice need not be signed, and an insufficient written notice may be supplemented and validated by verbal communication. A misdescription of the instrument does not vitiate the notice unless the party to whom the notice is given is in fact misled thereby.

§ 167. *Form of notice.*—The notice may be in writing or merely oral, and may be given in any terms which sufficiently identify the instrument, and indicate that it has been dishonored by non-acceptance or non-payment. It may in all cases be given by delivering it personally or through the mails.

Sufficient description generally is name of maker, date, amount, when and where payable.

Notice over telephone is sufficient. (*Am. Nat. Bank* v. *Nat. Fertilizer Co.*, 125 Tenn. 328.)

§ 168. *To whom notice may be given.*—Notice of dishonor may be given either to the party himself or to his agent in that behalf.

§ 169. *Notice where party is dead.*—When any party is dead, and his death is known to the party giving notice, the notice must be given to a personal representative, if there be one, and if with reasonable diligence he can be found. If there be no personal representative, notice may be sent to the last residence or last place of business of the deceased.

§ 170. *Notice to partners.*—Where the parties to be notified are partners, notice to any one partner is notice to the firm, even though there has been a dissolution.

§ 171. *Notice to persons jointly liable.*—Notice to joint parties who are not partners must be given to each of them, unless one of them has authority to receive such notice for the others.

§ 172. *Notice to bankrupt.*—Where a party has been adjudged a bankrupt or an insolvent, or has made an assignment for the benefit of creditors, notice may be given either to the party himself or to his trustee or assignee.

§ 173. *Time within which notice must be given.*—Notice may be given as soon as the instrument is dishonored; and unless delay is excused as hereinafter provided, must be given within the times fixed by this act.

§ 174. *Where parties reside in same place.*—Where the person giving and the person to receive notice reside in the same place, notice must be given within the following times:

1. If given at the place of business of the person to receive notice, it must be given before the close of business hours on the day following;
2. If given at his residence, it must be given before the usual hours of rest on the day following;
3. If sent by mail, it must be deposited in the post-office in time to reach him in usual course on the day following.

§ 175. *Where parties reside in different places.*—Where the person giving and the person to receive notice reside in different places, the notice must be given within the following times:

1. If sent by mail, it must be deposited in the post-office in time to go by mail the day following the day of dishonor, or if there be no mail at a convenient hour on that day, by the next mail thereafter.
2. If given otherwise than through the post-office, then within the time that notice would have been received in due course of mail, if it had been deposited in the post-office within the time specified in the last subdivision.

Notice is not good where there is delay due to **insufficient postage.** (*First Nat. Bank* v. *Miller*, 139 Wis. 126.)

§ 176. *When sender deemed to have given due notice.*—Where notice of dishonor is duly addressed and deposited in the post-office, the sender is deemed to have given due notice, notwithstanding any miscarriage in the mails.

§ 177. *Deposit in post-office; what constitutes.*—Notice is deemed to have been deposited

in the post-office when deposited in any branch post-office or in any letter-box under the control of the Post-Office Department.

§ 178. *Notice to subsequent party; time of.*—Where a party receives notice of dishonor, he has, after the receipt of such notice, the same time for giving notice to antecedent parties that the holder has after the dishonor.

§ 179. *Where notice must be sent.*—Where a party has added an address to his signature, notice of dishonor must be sent to that address; but if he has not given such address, then the notice must be sent as follows:

1. Either to the post-office nearest to his place of residence, or to the post-office where he is accustomed to receive his letters; or

2. If he live in one place, and have his place of business in another, notice may be sent to either place; or

3. If he is sojourning in another place, notice may be sent to the place where he is so sojourning.

But where the notice is actually received by the party within the time specified in this act, it will be sufficient, though not sent in accordance with the requirements of this section.

§ 180. *Waiver of notice.*—Notice of dishonor may be waived, either before the time of giving notice has arrived or after the omission to give due notice, and the waiver may be express or implied.

§ 181. *Whom affected by waiver.*—Where the waiver is embodied in the instrument itself, it is binding upon all parties; but where it is written above the signature of an indorser, it binds him only.

§ 182. *Waiver of protest.*—A waiver of protest, whether in the case of a foreign bill of exchange or other negotiable instrument, is deemed to be a waiver not only of a formal protest, but also of presentment and notice of dishonor.

§ 183. *When notice is dispensed with.*—Notice of dishonor is dispensed with when, after the exercise of reasonable diligence, it cannot be given to or does not reach the parties sought to be charged.

Reasonable diligence is all that is required under the law, which does not demand unusual effort to give notice of dishonor. (*Bank of Port Jefferson* v. *Darling*, 91 Hun 236.) Reliance on directory only is not sufficient to constitute due diligence. (*Bacon* v. *Harms*, 137 N. Y. 379.) Where a holder does not know or cannot find the address of the maker, it is his duty to inquire of the other parties to an instrument. (*University Press* v. *Williams*, 48 App. Div. [N. Y.] 190.)

§ 184. *Delay in giving notice; how excused.*—Delay in giving notice of dishonor is excused when the delay is caused by circumstances beyond the control of the holder and not imputable to his default, misconduct or negligence. When the cause of delay ceases to operate, notice must be given with reasonable diligence.

§ 185. *When notice need not be given to drawer.*—Notice of dishonor is not required to be given to the drawer in either of the following cases:

1. Where the drawer and drawee are the same person;

2. Where the drawee is a fictitious person or a person not having capacity to contract;

3. Where the drawer is the person to whom the instrument is presented for payment;

4. Where the drawer has no right to expect or require that the drawee or acceptor will honor the instrument;

5. Where the drawer has countermanded payment.

§ 186. *When notice need not be given to indorser.* Notice of dishonor is not required to be given to an indorser in either of the following cases:

1. Where the drawee is a fictitious person or a person not having capacity to contract, and the indorser was aware of the fact at the time he indorsed the instrument;

2. Where the indorser is the person to whom the instrument is presented for payment;

3. Where the instrument was made or accepted for his accommodation.

§ 187. *Notice of non-payment where acceptance refused.*—Where due notice of dishonor by non-acceptance has been given, notice of a subsequent dishonor by non-payment is not necessary, unless in the meantime the instrument has been accepted.

§ 188. *Effect of omission to give notice of non-acceptance.*—An omission to give notice

of dishonor by non-acceptance does not prejudice the rights of a holder in due course subsequent to the omission.

§ 189. *When protest need not be made; when must be made.*—Where any negotiable instrument has been dishonored it may be protested for non-acceptance or non-payment, as the case may be; but protest is not required, except in the case of foreign bills of exchange.

DISCHARGE.—

§ 200. *Instrument; how discharged.*—A negotiable instrument is discharged:

1. By payment in due course by or on behalf of the principal debtor;
2. By payment in due course by the party accommodated, where the instrument is made or accepted for accommodation;
3. By the intentional cancellation thereof by the holder;
4. By any other act which will discharge a simple contract for the payment of money;
5. When the principal debtor becomes the holder of the instrument at or after maturity in his own right.

§ 201. *When persons secondarily liable on, discharged.*—A person secondarily liable on the instrument is discharged:

1. By any act which discharges the instrument;
2. By the intentional cancellation of his signature by the holder;
3. By the discharge of a prior party;
4. By a valid tender of payment made by a prior party;
5. By a release of the principal debtor, unless the holder's right of recourse against the party secondarily liable is expressly reserved;
6. By any agreement binding upon the holder to extend the time of payment or to postpone the holder's right to enforce the instrument, unless the right of recourse against such party is expressly reserved.

§ 202. *Right of party who discharges instrument.*—Where the instrument is paid by a party secondarily liable thereon, it is not discharged; but the party so paying it is remitted to his former rights as regards all prior parties, and he may strike out his own and all subsequent indorsements, and again negotiate the instrument, except:

1. Where it is payable to the order of a third person, and has been paid by the drawer; and
2. Where it was made or accepted for accommodation, and has been paid by the party accommodated.

§ 203. *Renunciation by holder.*—The holder may expressly renounce his rights against any party to the instrument, before, at or after its maturity. An absolute and unconditional renunciation of his rights against the principal debtor made at or after the maturity of the instrument, discharges the instrument. But a renunciation does not affect the rights of a holder in due course without notice. A renunciation must be in writing, unless the instrument is delivered up to the person primarily liable thereon.

§ 204. *Cancellation; unintentional; burden of proof.*—A cancellation made unintentionally, or under a mistake, or without the authority of the holder, is inoperative; but where an instrument or any signature thereon appears to have been canceled the burden of proof lies on the party who alleges that the cancellation was made unintentionally, or under a mistake or without authority.

§ 205. *Alteration of instrument; effect of.*—Where a negotiable instrument is materially altered without the assent of all parties liable thereon, it is avoided, except as against a party who has himself made, authorized or assented to the alteration and subsequent indorsers. But when an instrument has been materially altered and is in the hands of a holder in due course, not a party to the alteration, he may enforce payment thereon according to its original tenor.

§ 206. *What constitutes a material alteration.*—Any alteration which changes:

1. The date;
2. The sum payable, either for principal or interest;
3. The time or place of payment;
4. The number or the relations of the parties;
5. The medium or currency in which payment is to be made;

Or which adds a place of payment where no place of payment is specified, or any other change or addition which alters the effect of the instrument in any respect, is a material alteration.

BILLS OF EXCHANGE.—

§ 210. *Bill of exchange defined.*—A bill of exchange is an unconditional order in writing addressed by one person to another, signed by the person giving it, requiring the person to whom it is addressed to pay on demand or at a fixed or determinable future time a sum certain in money to order or to bearer.

§ 211. *Bill not an assignment of funds in hands of drawee..*—A bill of itself does not operate as an assignment of the funds in the hands of the drawee available for the payment thereof, and the drawee is not liable on the bill unless and until he accepts the same.

§ 212. *Bill addressed to more than one drawee.*—A bill may be addressed to two or more drawees jointly, whether they are partners or not; but not to two or more drawees in the alternative or in succession.

§ 213. *Inland and foreign bills of exchange.*—An inland bill of exchange is a bill which is, or on its face purports to be, both drawn and payable within the State. Any other bill is a foreign bill. Unless the contrary appears on the face of the bill, the holder may treat it as an inland bill.

§ 214. *When bill may be treated as promissory note.*—Where in a bill the drawer and drawee are the same person, or where the drawee is a fictitious person, or a person not having capacity to contract, the holder may treat the instrument, at his option, either as a bill of exchange or a promissory note.

§ 215. *Referee in case of need.*—The drawer of a bill and any indorser may insert thereon the name of a person to whom the holder may resort in case of need, that is to say, in case the bill is dishonored by non-acceptance or non-payment. Such person is called the referee in case of need. It is in the option of the holder to resort to the referee in case of need or not, as he may see fit.

ACCEPTANCE.—

§ 220. *Acceptance; how made, et cetera.*—The acceptance of a bill is the signification by the drawee of his assent to the order of the drawer. The acceptance must be in writing and signed by the drawee. It must not express that the drawee will perform his promise by any other means than the payment of money.

§ 221. *Holder entitled to acceptance on face of bill.*—The holder of a bill presenting the same for acceptance may require that the acceptance be written on the bill, and if such request is refused, may treat the bill as dishonored.

§ 222. *Acceptance by separate instrument.*—Where an acceptance is written on a paper other than the bill itself, it does not bind the acceptor, except in favor of a person to whom it was shown and who, on the faith thereof, receives the bill for value.

§ 223. *Promise to accept; when equivalent to acceptance.*—An unconditional promise in writing to accept a bill before it is drawn is deemed an actual acceptance in favor of every person who, upon the faith thereof, receives the bill for value.

§ 224. *Time allowed drawee to accept.*—The drawee is allowed twenty-four hours after presentment in which to decide whether or not he will accept the bill; but the acceptance if given dates as of the day of presentation.

§ 225. *Liability of drawee retaining or destroying bill.*—Where a drawee to whom a bill is delivered for acceptance destroys the same, or refuses within twenty-four hours after such delivery, or within such other period as the holder may allow, to return the bill accepted or non-accepted to the holder, he will be deemed to have accepted the same.

§ 226. *Acceptance of incomplete bill.*—A bill may be accepted before it has been signed by the drawer, or while otherwise incomplete, or when it is overdue, or after it has been dishonored by a previous refusal to accept, or by non-payment. But when a bill payable after sight is dishonored by non-acceptance and the drawee subsequently accepts it, the holder, in the absence of any different agreement, is entitled to have the bill accepted as of the date of the first presentment.

§ 227. *Kinds of acceptances.*—An acceptance is either general or qualified. A general acceptance assents without qualification to the order of the drawer. A qualified acceptance in express terms varies the effect of the bill as drawn.

§ 228. *What constitutes a general acceptancy.*—An acceptance to pay at a particular place is a general acceptance unless it expressly states that the bill is to be paid there only and not elsewhere.

§ 229. *Qualified acceptance.*—An acceptance is qualified which is:

1. Conditional, that is to say, which makes payment by the acceptor dependent on the fulfillment of a condition therein stated;

2. Partial, that is to say, an acceptance to pay part only of the amount for which the bill is drawn;

3. Local, that is to say, an acceptance to pay only at a particular place;

4. Qualified as to time;

5. The acceptance of some one or more of the drawees, but not of all.

§ 230. *Rights of parties as to qualified acceptance.*—The holder may refuse to take a qualified acceptance, and if he does not obtain an unqualified acceptance, he may treat the bill as dishonored by non-acceptance. Where a qualified acceptance is taken, the drawer and indorsers are discharged from liability on the bill, unless they have expressly or impliedly authorized the holder to take a qualified acceptance, or subsequently assent thereto. When the drawer or an indorser receives notice of a qualified acceptance, he must within a reasonable time express his dissent to the holder, or he will be deemed to have assented thereto.

PRESENTMENT FOR ACCEPTANCE.—

§ 240. *When presentment for acceptance must be made.*—Presentment for acceptance must be made:

1. Where the bill is payable after sight or in any other case where presentment for acceptance is necessary in order to fix the maturity of the instrument; or

2. Where the bill expressly stipulates that it shall be presented for acceptance; or

3. Where the bill is drawn payable elsewhere than at the residence or place of business of the drawee.

In no other case is presentment for acceptance necessary in order to render any party to the bill liable.

§ 241. *When failure to present releases drawer and indorser.*—Except as herein otherwise provided, the holder of a bill which is required by the next preceding section to be presented for acceptance must either present it for acceptance or negotiate it within a reasonable time. If he fails to do so, the drawer and all indorsers are discharged.

§ 242. *Presentment; how made.*—Presentment for acceptance must be made by or on behalf of the holder at a reasonable hour, on a business day, and before the bill is overdue, to the drawee or some person authorized to accept or refuse acceptance on his behalf; and

1. Where a bill is addressed to two or more drawees who are not partners, presentment must be made to them all, unless one has authority to accept or refuse acceptance for all, in which case presentment may be made to him only;

2. Where the drawee is dead, presentment may be made to his personal representative;

3. Where the drawee has been adjudged a bankrupt or an insolvent, or has made an assignment for the benefit of creditors, presentment may be made to him or to his trustee or assignee.

§ 243. *On what days presentment may be made.*—A bill may be presented for acceptance on any day on which negotiable instruments may be presented for payment under the provisions of sections one hundred and thirty-two and one hundred and forty-five of this act. When Saturday is not otherwise a holiday, presentment for acceptance may be made before twelve o'clock noon on that day.

§ 244. *Presentment when time is insufficient.*—Where the holder of a bill drawn payable elsewhere than at the place of business or the residence of the drawee has not time with the exercise of reasonable diligence to present the bill for acceptance before presenting it for payment on the day that it falls due, the delay caused by presenting the bill for acceptance before presenting it for payment is excused and does not discharge the drawers and indorsers.

§ 245. *Where presentment is excused.*—Presentment for acceptance is excused and a bill may be treated as dishonored by non-acceptance in either of the following cases:

1. Where the drawee is dead or has absconded, or is a fictitious person or a person not having capacity to contract by bill;

2. Where after the exercise of reasonable diligence, presentment cannot be made;

3. Where, although presentment has been irregular, acceptance has been refused on some other ground.

WHEN DISCHARGED BY NON-ACCEPTANCE.—

§ 246. *When discharged by non-acceptance.*—A bill is dishonored by non-acceptance:

1. When it is duly presented for acceptance, and such an acceptance as is prescribed by this act is refused or cannot be obtained; or

2. When presentment for acceptance is excused and the bill is not accepted.

§ 247. *Duty of holder where bill not accepted.*—Where a bill is duly presented for acceptance and is not accepted within the prescribed time, the person presenting it mtus treat the bill as dishonored by non-acceptance or he loses the right of recourse against the drawer and indorsers.

§ 248. *Rights of holder where bill not accepted.*—When a bill is dishonored by non-acceptance, an immediate right of recourse against the drawers and indorsers accrues to the holder, and no presentment for payment is necessary.

PROTEST.—

§ 260. *In what cases protest necessary.*—Where a foreign bill appearing on its face to be such is dishonored by non-acceptance, it must be duly protested for non-acceptance, and where such a bill which has not previously been dishonored by non-acceptance is dishonored by non-payment, it must be duly protested for non-payment. If it is not so protested, the drawer and indorsers are discharged. Where a bill does not appear on its face to be a foreign bill, protest thereof in case of dishonor is unnecessary.

§ 261. *Protest; how made.*—The protest must be annexed to the bill, or must contain a copy thereof, and must be under the hand and seal of the notary making it, and must specify:

1. The time and place of presentment;
2. The fact that presentment was made and the manner thereof;
3. The cause or reason for protesting the bill;
4. The demand made and the answer given, if any, or the fact that the drawee or acceptor could not be found.

§ 262. *Protest; by whom made.*—Protest may be made by:

1. A notary public; or
2. By any respectable resident of the place where the bill is dishonored, in the presence of two or more creditable witnesses.

§ 263. *Protest; when to be made.*—When a bill is protested, such protest must be made on the day of its dishonor, unless delay is excused as herein provided. When a bill has been duly noted, the protest may be subsequently extended as of the date of the noting.

§ 264. *Protest; where made.*—A bill must be protested at the place where it is dishonored, except that when a bill drawn payable at the place of business or residence of some person other than the drawee, has been dishonored by non-acceptance, it must be protested for non-payment at the place where it is expressed to be payable, and no further presentment for payment to, or demand on, the drawee is necessary.

§ 265. *Protest both for non-acceptance and non-payment.*—A bill which has been protested for non-acceptance may be subsequently protested for non-payment.

§ 266. *Protest before maturity where acceptor insolvent.*—Where the acceptor has been adjudged a bankrupt or an insolvent, or has made an assignment for the benefit of creditors, before the bill matures, the holder may cause the bill to be protested for better security against the drawer and indorsers.

§ 267. *When protest dispensed with.*—Protest is dispensed with by any circumstances which would dispense with notice of dishonor. Delay in noting or protesting is excused when delay is caused by circumstances beyond the control of the holder and not imputable to his default, misconduct, or negligence. When the cause of delay ceases to operate, the bill must be noted or protested with reasonable diligence.

§ 268. *Protest where bill is lost, et cetera.*—Where a bill is lost or destroyed, or is wrongly detained from the person entitled to hold it, protest may be made on a copy or written particulars thereof.

ACCEPTANCE FOR HONOR.—

§ 280. *When bill may be accepted for honor.*—Where a bill of exchange has been protested for dishonor by non-acceptance or protested for better security and is not overdue, any person not being a party already liable thereon may, with the consent of the holder, intervene and accept the bill supra protest for the honor of any party liable thereon or for the honor of the person for whose account the bill is drawn. The acceptance for honor may be for part only of the sum for which the bill is drawn; and where there has been an acceptance for honor for one party, there may be a further acceptance by a different person for the honor of another party.

§ 281. *Acceptance for honor; how made.*—An acceptance for honor supra protest must be in writing and indicate that it is an acceptance for honor, and must be signed by the acceptor for honor.

§ 282. *When deemed to be an acceptance for honor of the drawer.*—Where an acceptance for honor does not expressly state for whose honor it is made, it is deemed to be an acceptance for the honor of the drawer.

§ 283. *Liability of acceptor for honor.*—The acceptor for honor is liable to the holder and to all parties to the bill subsequent to the party for whose honor he has accepted.

§ 284. *Agreement of acceptor for honor.*—The acceptor for honor by such acceptance engages that he will on due presentment pay the bill according to the terms of his acceptance, provided it shall not have been paid by the drawee, and provided also that it shall have been duly presented for payment and protested for non-payment and notice of dishonor given to him.

§ 285. *Maturity of bill payable after sight; accepted for honor.*—Where a bill payable after sight is accepted for honor, its maturity is calculated from the date of the noting for non-acceptance and not from the date of the acceptance for honor.

§ 286. *Protest of bill accepted for honor, et cetera.*—Where a dishonored bill has been accepted for honor supra protest or contains a reference in case of need, it must be protested for non-payment before it is presented for payment to the acceptor for honor or referee in case of need.

§ 287. *Presentment for payment to acceptor for honor; how made.*—Presentment for payment to the acceptor for honor must be made as follows:

1. If it is to be presented in the place where the protest for non-payment was made, it must be presented not later than the day following its maturity;
2. If it is to be presented in some other place than the place where it was protested, then it must be forwarded within the time specified in section one hundred and seventy-five.

§ 288. *When delay in making presentment is excused.*—The provisions of section one hundred and forty-one apply where there is delay in making presentment to the acceptor for honor or referee in case of need.

PAYMENT FOR HONOR.—

§ 300. *Who may make payment for honor.*—Where a bill has been protested for non-payment, any person may intervene and pay its supra protest for the honor of any person liable thereon or for the honor of the person for whose account it was drawn.

§ 301. *Payment for honor; how made.*—The payment for honor supra protest in order to operate as such and not as a mere voluntary payment must be attested by a notarial act of honor, which may be appended to the protest or form an extension to it.

§ 302. *Declaration before payment for honor.* The notarial act of honor must be founded on a declaration made by the payer for honor, or by his agent in that behalf declaring his intention to pay the bill for honor and for whose honor he pays.

§ 303. *Preference of parties offering to pay for honor.* Where two or more persons offer to pay a bill for the honor of different parties, the person whose payment will discharge most parties to the bill is to be given the preference.

§ 304. *Effect on subsequent parties where bill is paid for honor.*—Where a bill has been paid for honor all parties subsequent to the party for whose honor it is paid are discharged, but the payer for honor is subrogated for, and succeeds to, both the rights and duties of the holder as regards the party for whose honor he pays and all parties liable to the latter.

§ 305. *Where holder refuses to receive payment supra protest.*—Where the holder of a bill refuses to receive payment supra protest, he loses his right of recourse against any party who would have been discharged by such payment.

§ 306. *Rights of payer for honor.*—The payer for honor, on paying to the holder the amount of the bill and the notarial expenses incidental to its dishonor, is entitled to receive both the bill itself and the protest.

BILLS IN A SET.—

§ 310. *Bills in sets constitute one bill.*—Where a bill is drawn in a set, each part of the set being numbered and containing a reference to the other parts, the whole of the parts constitute one bill.

§ 311. *Rights of holders where different parts are negotiated.*—Where two or more parts

of a set are negotiated to different holders in due course, the holder whose title first accrues is as between such holders the true owner of the bill. But nothing in this section affects the rights of a person who in due course accepts or pays the part first presented to him.

§ 312. *Liability of holder who indorses two or more parts of a set to different persons.*—Where the holder of a set indorses two or more parts to different persons he is liable on every such part, and every indorser subsequent to him is liable on the part he has himself indorsed, as if such parts were separate bills.

§ 313. *Acceptance of bills drawn in sets.*—The acceptance may be written on any part, and it must be written on one part only. If the drawee accepts more than one part, and such accepted parts are negotiated to different holders in due course, he is liable on every such part as if it were a separate bill.

§ 314. *Payment by acceptor of bills drawn in sets.*—When the acceptor of a bill drawn in a set pays it without requiring the part bearing his acceptance to be delivered up to him, and that part at maturity is outstanding in the hands of a holder in due course, he is liable to the holder thereon.

§ 315. *Effect of discharging one of a set.*—Except as herein otherwise provided, where any one part of a bill drawn in a set is discharged by payment or otherwise the whole bill is discharged.

PROMISSORY NOTES AND CHECKS.—

§ 320. *Promissory note defined.*—A negotiable promissory note within the meaning of this act is an unconditional promise in writing made by one person to another, signed by the maker, engaging to pay on demand or at a fixed or determinable future time a sum certain in money to order or to bearer. Where a note is drawn to the maker's own order, it is not complete until indorsed by him.

§ 321. *Check defined.*—A check is a bill of exchange drawn on a bank, payable on demand. Except as herein otherwise provided, the provisions of this act applicable to a bill of exchange payable on demand apply to a check.

§ 322. *Within what time a check must be presented.*—A check must be presented for payment within a reasonable time after its issue or the drawer will be discharged from liability thereon to the extent of the loss caused by the delay.

323. *Certification of check; effect of.*—Where a check is certified by the bank on which it is drawn the certification is equivalent to an acceptance.

§ 324. *Effect where the holder of check procures it to be certified.*—Where the holder of a check procures it to be accepted or certified the drawer and all indorsers are discharged from liability thereon.

§ 325. *When check operates as an assignment.*—A check of itself does not operate as an assignment of any part of the funds to the credit of the drawer with the bank, and the bank is not liable to the holder, unless and until it accepts or certifies the check.

§ 326. *Recovery of forged check.*—No bank shall be liable to a depositor for the payment by it of a forged or raised check, unless within one year after the return to the depositor of the voucher of such payment, such depositor shall notify the bank that the check so paid was forged or raised.

§ 330. *Negotiable instruments given for patent rights.*—A promissory note or other negotiable instrument, the consideration of which consists wholly or partly of the right to make, use or sell any invention claimed or represented by the vendor at the time of sale to be patented, must contain the words "given for a patent right" prominently and legibly written or printed on the face of such note or instrument above the signature thereto; and such note or instrument in the hands of any purchaser or holder is subject to the same defenses as in the hands of the original holder; but this section does not apply to a negotiable instrument given solely for the purchase price or the use of a patented article.

§ 331. *Negotiable instruments for a speculative consideration.*—If the consideration of a promissory note or other negotiable instrument consists in whole or in part of the purchase price of any farm product, at a price greater by at least four times than the fair market value of the same product at the time, in the locality, or of the membership and rights in an association, company or combination to produce or sell any farm product at a fictitious rate, or of a contract or bond to purchase or sell any farm product at a price greater by four times than the market value of the same product at the time in the locality, the words, "given for a speculative consideration," or other words

clearly showing the nature of the consideration, must be prominently and legibly written or printed on the face of such note or instrument above the signature thereof; and such note or instrument, in the hands of any purchaser or holder, is subject to the same defenses as in the hands of the original owner or holder.

§ 332. *How negotiable bonds are made non-negotiable.*—The owner or holder of any corporate or municipal bond or obligation (except such as are designated to circulate as money, payable to bearer), heretofore or hereafter issued in and payable in this State, but not registered in pursuance of any State law, may make such bond or obligation, or the interest coupon accompanying the same, non-negotiable, by subscribing his name to a statement indorsed thereon that such bond, obligation or coupon is his property; and thereon the principal sum therein mentioned is payable only to such owner or holder, or his legal representatives or assigns, unless such bond, obligation or coupon be transferred by indorsement in blank, or payable to bearer, or to order, with the addition of the assignor's place of residence.

Law of Partnerships

DEFINITION.—"A contract of partnership is one by which two or more persons agree to carry on a business for their common benefit, each contributing property or services, and having a community of interest in the profits. It is in effect a contract of mutual agency, each partner acting as a principal in his own behalf and as agent for his copartner." (*Karrick* v. *Hannaman*, 168 U. S. 328.)

FORMATION AND ELEMENTS.—

By Contract.—A partnership is the result of a contract which at common law may be oral or written. "There is no such thing as a partnership by implication of law. The relation *inter se* is founded in voluntary contract, and cannot exist independent of it." (*Wilson's Exrs.* v. *Cobb's Exrs.*, 28 N. J. Eq. 177.) The contract must be enforcible and contain all elements necessary to support a simple contract in so far as it relates to capacity of parties, consideration and purpose.

Purpose.—A partnership may be formed for any purpose agreed to by the parties which does not contravene the law. (*Sampson* v. *Shaw*, 101 Mass. 145.) A partnership formed for illegal purposes or carrying on a legal business in an illegal manner is not recognized by the courts and no assistance will be given to enforce its claims, compel members to account, or contribute for losses. (*McMullen* v. *Hoffman*, 174 U. S. 639.)

Community of Interest.—"In every partnership there is a community of interest, but every community of interest does not create a partnership. There must be a joint ownership of the partnership funds, as a joint right of control over them and also an agreement to share the profits and losses arising therefrom." (*Sodiker* v. *Applegate*, 24 W. Va. 411.) "Partnership involves community of interest in some lawful commerce or business for the conduct of which the parties are mutually agents for each other—but with general powers within the scope of the business; which powers they can restrict by agreement to the extent of making one the sole agent of the rest of the business." (*Brotherton* v. *Gilchrist*, 144 Mich. 274.)

Sharing Profits.—Sharing profits of a business raises a presumption that there is a partnership, which, however, is not conclusive. "The tendency of the modern authorities is toward the doctrine that the sharing of profits is evidence that he who shares them is a partner, but not conclusive evidence, the true test being whether there is such a participation in or sharing of the profits as to constitute the relation of principal and agent between the person taking the profits and those actually carrying on the business. The inten-

tion of the parties must control. The relation of partners is formed by contract, or by the acts of the parties which amount to a contract. If there is no partnership *inter se*, there can be none as to third parties, unless a party by his acts has put himself in such a position that he is estopped from denying that he is a partner." (*Johnson* v. *Rothschild*, 63 Ark. 518.)

Business in Common.—To have a partnership there must be merged into a common business the individual property, interests, rights, and powers of the associates so that they are coprincipals in the business. (*Bendell* v. *Hettrick*, 35 N. Y. Sup. Ct. 45; *Meserve* v. *Andrews*, 104 Mass. 360.)

Single Ventures.—Although a partnership can and may be formed for a single venture, in the absence of express agreement it is necessary to make inquiries to determine if a partnership exists, or whether there is not some other relation, as joint tenancy or tenancy in common. If the partners have contributed to a common fund from which purchases were made for the venture, a partnership will be inferred; otherwise not. (*Guibert* v. *Saunders*, 10 N. Y. St. 43; *Clark* v. *Sidway*, 142 U. S. 682.)

Farming on Shares.—"An agreement between two parties that one shall furnish a farm with a certain amount of teams and labor and the other shall manage the farm and give certain labor, the crops to be divided, does not constitute a partnership." (*Blue* v. *Leathers*, 15 Ill. 32.)

Share of Profits as Compensation.—In and of itself a share of the profits given as compensation does not create the relation of partnership in the absence of other elements, as a community of interest and rights as a partner. (*Grapel* v. *Hodges*, 112 N. Y. 419; *Gentry* v. *Singleton*, 128 Fed. 679.)

Sharing Profits and Losses.—"A mere agreement to share profits and losses does not constitute persons partners *inter se*." (*McDonald* v. *Matney*, 82 Mo. 358.) The other elements heretofore mentioned are necessary.

Formation by Estoppel.—The doctrine of estoppel is not applied very often in establishing the relation of partnership among the members themselves. It is, however, applicable in such cases where one has availed himself of the benefits of an apparent partnership and who then denies being a partner to to the injury of his copartner. (*Pierce* v. *Whitley*, 39 Ala. 172; *McStea* v. *Matthews*, 50 N. Y. 166.)

PARTNERSHIP RELATIONS.—

As to Outside Parties.—Persons who as a result of contract become partners among themselves are considered and held as partners as to third parties. "A partnership, as to third persons, can only arise either by contract between the parties themselves, by implication of law arising from a contract which does not make them partners as to each other but does make them partners as to third persons, or by some act or declaration of the partners by which third persons are reasonably led to suppose that the partnership exists." (*Ernstein* v. *Gourdin*, Fed. Case No. 4320.)

By Estoppel.—A person although not a partner in fact will be held liable as one where he held himself out as a partner so that others were led to deal with him. "The theory upon which such a liability arises is that persons who hold themselves out to the world as partners by dealing in such a manner as to create the appearance of partnership to the injury of innocent third parties, are estopped from denying that their actual relation is not what their acts would seem to indicate it to be." (*Clark* v. *Rumsey*, 59 N. Y. App. Div. 435.)

Dormant Partner.—A dormant partner is one whose connection with the firm is unknown to the general public and who takes no active interest in the

management. The relation is the result of contract and on retirement he need not give notice to trade creditors or the public to escape liability.

Partnership Property.—All property contributed by partners or subsequently acquired becomes firm property, as well as all profits accrued during the operation of the business. (*Wilson* v. *Cobb*, 29 N. J. Eq. 361.)

Real Estate.—Real estate contributed by one of the partners becomes partnership property. Where such property is purchased with partnership funds it is firm property even if title is taken in the name of one partner only, who then holds it as a constructive trustee. "Real estate purchased with partnership funds for partnership uses, though the title be taken in the name of one partner, is in equity treated as personal property, so far as is necessary to pay the debts of the partnership and adjust the equities of the partners." (*Shanks* v. *Klein*, 104 U. S. 18.)

RIGHTS AND LIABILITIES—1. AS TO PARTNERS.—

Trust Relations.—The partnership relation is one requiring utmost good faith in the dealings of the partners among themselves during the continuance of the partnership. This trust relation extends from the very first negotiation leading to the formation of the partnership to the time for dissolution. (*Butler* v. *Prentice*, 158 N. Y. 49.)

Capital of the Firm.—The capital of the firm consists of what is contributed by the members, which becomes firm property, and any profits earned less the liabilities due creditors.

Advances and Loans.—In the absence of agreement the sums contributed by partners beyond their capital investment are treated as loans and advances for which they are entitled to be reimbursed. (*Topping* v. *Paddock*, 92 Ill. 92.)

Interest.—Interest does not accrue to partners on their balances until after the balance is struck and then only by agreement. A partner's capital does not bear interest unless expressly agreed on by the partners.

Interest on Advances.—The modern rule on this subject is that a partner who has made a cash loan to his firm over and above his capital requirement is entitled to interest at the legal rate without an express agreement with his copartners. (*Rodgers* v. *Clement*, 162 N. Y. 422; *Winchester* v. *Glazier*, 152 Mass. 316.)

Management.—In the absence of agreement, every partner is entitled to a share in the management of the business and in case of disagreement the majority governs. (*Livingston* v. *Lynch*, 4 Johns Ch. 573.)

Books of Account.—The partnership books of account should be kept at the firm's place of business, accessible to each partner, and entries made by anyone will be construed as conclusive as to him. Where all partners have access to the books they will be deemed accurate. The correctness of books kept by one partner can be questioned by another. Any of these presumptions may be rebutted by the parties. (*Tallmadge* v. *Penoyer*, 35 Barb. [N. Y.] 120.)

Statement of Accounts.—"Statements of account, whether taking the form of periodical balances on the firm's books or of formal documents interchanged among the partners, are generally conclusive upon the partners, unless impeachable because of fraud or mutual mistake. It is the duty of each partner to examine such accountings and complain promptly of any mistakes therein. Failure to do this and consequent acquiescence in the correctness of the statements operate ordinarily as a bar to any subsequent claim inconsistent with them." (30 Cyc. 448.)

Reimbursement for Expense.—A partner is entitled to reimbursement for expenditures made by him on behalf of the firm.

Salary and Services.—Unless agreed to by the partners the members are not entitled to salary, and where no agreement exists to the contrary they must devote their entire time and effort to partnership affairs.

Sharing Profits.—In the absence of agreement the partners share profits equally regardless of the inequality of capital and services contributed by them. (*Evans* v. *Warner*, 20 N. Y. App. Div. 230; *Kimberly* v. *Arms*, 129 U. S. 512.)

Conflict of Interests—Partner Dealing with Outsiders.—By reason of the relation of partnership requiring a partner to devote himself personally to the purposes of the firm, the courts scrutinize carefully the transactions of a partner in his individual capacity with outside parties and will compel the partner to account to the firm for all profit arising from such transactions if the partner's personal interest and those of the firm are in conflict. (*Bloom* v. *Lofgren*, 64 Minn. 1.)

Transactions Prohibited.—A partner cannot use partnership funds to pay personal debts, gain secret profits from the firm, or use firm property for individual benefit unless specifically authorized by the other partners.

Legal Action Between Partners.—One partner cannot sue another at law in regard to partnership matters until the partnership has been dissolved and there has been an accounting. (*Mitchell* v. *Tonkin*, 109 App. Div. [N. Y.] 165.)

2. AS TO OUTSIDE PARTIES.—

Partners' Status.—Each member of a partnership is an agent for all the others in the firm business (*Andrews* v. *Congar*, 131 U. S. 26) and "a partner is bound by the act of his copartner within the scope of the business of the firm, even if that act be fraudulent as between the partners." (*Capelle* v. *Hall*, Fed. Case No. 2391.)

Firm Name.—Where a partnership has adopted a firm name it will be bound only by transactions made and running in that name, unless they consent and ratify to the use of some other name. (*Palmer* v. *Stephens*, 1 Den. [N. Y.] 471.)

Buying and Selling.—Each partner has implied authority to bind the firm through contract for the purchase and sale of property usually dealt with in the course of the partnership business.

Sale of Real Estate.—Without express authority from the other members a partner has no authority to sell and convey real estate belonging to the firm (*Calder* v. *Creditors*, 47 La. Ann. 346), unless the real estate by agreement or by reason of the nature of the business is regarded as personalty (*Rooelsky* v. *Brown*, 92 Ala. 522).

Disposing of Entire Property.—"A transfer, by only one of several partners, of all the firm property, not made for partnership purposes, nor in payment of a creditor, nor as an assignment of firm property in the due course of business, nor as security for an antecedent debt, is void." (*Freemen* v. *Abramson*, 30 Misc. [N. Y.] 101.)

Releases and Settlements.—A partner has authority to release claims of the partnership and make settlement of transactions within the scope of the partnership business.

Negotiable Paper.—Within the scope of the firm's business a partner has authority to negotiate commercial paper for the partnership business. (*Silvermann* v. *Chase*, 90 Ill. 37; *Rumsey* v. *Briggs*, 139 N. Y. 323.) He has,

however, no authority to bind the firm by accommodation indorsement without their consent. (*Beach* v. *State Bank*, 2 Ind. 488.)

"The theory upon which one partner may bind his copartners by the use of the partnership name upon commercial paper, or other parol contracts, is that a confidence is reposed which amounts to a power or authority to each partner to bind the firm by contracts in matters relating to the business of the partnership. But this power is circumscribed and limited to contracts within the scope of the partnership business." (*Elliott* v. *Dudley*, 19 Barb. [N. Y.] 326.)

Suretyship and Guaranty.—One partner cannot bind the firm as guarantor or surety for a third person, without the assent or ratification of the other partners. (*Avery* v. *Rowall*, 59 Wis. 82.)

Arbitration.—A partner cannot bind his copartners by submission of partnership matters to arbitration. (*Karthaus* v. *Yllasy Ferrer*, 26 U. S. 222.)

Torts.—General rule: "A defendant cannot be held liable for the tortious act of another on the ground that they were partners, except upon proof that the partnership in fact existed at the time, and that the act was done in relation to the partnership business, with the knowledge and approval or ratification of such defendant, or that it was plainly for the benefit of the firm, and was committed in the usual and ordinary prosecution of the business which the partner committing it was accustomed to transact." (*Shapard* v. *Hynes*, 104 Fed. 45.)

RIGHTS AND REMEDIES OF CREDITORS.—

Marshaling of Assets.—This refers to the application of assets to the liquidation of debts of the firm and the individual members thereof, and applies where firm assets and individual assets of its members are before a court of equity for distribution, as in the case of insolvency of the firm and of its members individually. (*United States* v. *Lewis*, 92 U. S. 618.) The **rule** then is that firm debts must be paid out of firm property, and private debts out of private property; and no resort can be had by the one class of creditors to the fund belonging to the other until their own fund has been first exhausted. (*Pahlman* v. *Graves*, 26 Ill. 405.)

Creditors of a partnership can look only to the surplus of the separate estate of the members of the firm after the payment of the separate debts, and separate creditors can seek indemnity only from the surplus of the joint fund after the satisfaction of joint creditors. (*McCulloh* v. *Dashiells Adm.*, 1 Har. & G. 96.)

Real Estate.—Real estate of the firm even though in the name of but one or more partners is treated as a firm asset available for liquidation of firm debts in preference to the claims of the individual partners. (*Standish* v. *Babcock*, 52 N. J. Eq. 628.)

Creditors of Individual Partners.—A creditor of an individual partner in seeking to satisfy his claim from partnership property is confined to the share of the partner in the firm assets after all firm liabilities are met. It is not any particular piece of property but an interest in the firm assets after the settlement of firm accounts, which is applicable to a partner's separate debts. (*Atwood* v. *Meredith*, 37 Miss. 635.)

DISSOLUTION.—

Retirement or Admission of Partner.—Under the common law the retirement or admission of a partner resulted in the creation of a new firm and a dissolution of the old one unless the partners agree in their partnership

contract that the admission or retirement of members shall not work a dissolution. (*Rand* v. *Wright*, 141 Ind. 226.)

Use of Firm Name.—The continuance of the use of a firm name after dissolution may be acquired by the remaining partners by purchase or agreement. It is, however, not an inherent right and in the absence of such agreement it is held that the continuing partners have no right to continue to use the firm name. (*Morgan* v. *Schuyler*, 79 N. Y. 490.)

Good-Will.—The good-will of a business is property capable of being sold. Generally it passes with a business and in the sale or retirement of a partner the good-will continues with the remaining members conducting the business and passes to them under the agreement of sale or continuance of the business even though no specific mention is made of the intangible asset. (*Steinfeld* v. *National Shirt Waist Co.*, *in re* good-will, see 20 Cyc. 1278.)

Liability of Retiring Partner.—A retiring partner remains liable for debts contracted before his retirement even though his copartners have agreed to assume the liabilities and discharge the obligations. (*Penn* v. *Fogler*, 182 Ill. 76.)

Notice by Retiring Partner.—A retiring partner is liable not only for debts contracted by the firm before his retirement but also for subsequent debts unless he has given notice of his retirement. That notice must be actual notice in the case of former creditors and constructive notice to the trade in general, which is done as a rule by sending letters or announcements to the former creditors and newspaper announcements to the trade in general.

Novation.—Novation is established and the retiring partner discharged of liability for debts of the firm where creditors, with knowledge of the continuing partner's agreement to assume the debts, enter into a totally new agreement with him entirely changing the nature of the debt. (*Harris* v. *Lindsay*, Fed. Case No. 6123; *Regester* v. *Dodge*, 61 How. Prac. 107.)

Death of Partner.—In the absence of agreement, death terminates the partnership and the surviving partner has the exclusive right to liquidate the affairs of the firm, but not the right to subject the estate of the deceased partner to any new obligations.

Rights of Widow and Heirs.—The interest of a deceased partner in partnership real estate descends to his heirs at law, subject to the debts of the partnership and the equities of the remaining partners, in accordance with real estate law, unless the partnership agreement treats the real estate as personal property by equitable conversion, in which case distribution follows the law of personalty.

Accounting and Settlement.—The surviving partner must account to the estate of the deceased partner for his interest in the firm at a fair valuation, and if he fails, he can be compelled to present such an accounting by the proper probate courts. (*Clausen* v. *Privogel*, 114 App. Div. [N. Y.] 455; *Leland* v. *Newton*, 102 Mass. 350.)

TERMINATION OF PARTNERSHIP.—

Partnership at Will.—A partnership at will is one in which no definite time or term is fixed and which may be terminated by a member at any time by giving notice to all the other partners.

Fixed Term.—A partnership is terminated by efflux of time where a fixed time is agreed upon by the partners. This may, however, be changed subsequently by mutual consent.

Death, Insanity, or Bankruptcy of Partner.—Dissolves partnership *ipso facto.*

Accounting.—On dissolution each partner is entitled to an accounting from each one of his other partners on all matters relating to partnership transactions. (*Lorch* v. *Hull*, 178 N. Y. 9; *Mellor* v. *Smither*, 114 Fed. 116.) In the absence of fraud or mistake an accounting and settlement between partners at the time of dissolution is binding on the partners and is a good defense in an action by any one to require further settlement. (*Wells* v. *Erstein*, 24 La. Ann. 317.)

THE UNIFORM PARTNERSHIP ACT.—The desirability of having uniform laws throughout the country, particularly in so far as they relate to business, is generally recognized. Many states have adopted a number of the uniform laws devised by the commissioners appointed for that purpose; the most generally known are the Uniform Negotiable Instruments Law and the Uniform Sales Act.

States and territories which have adopted the Uniform Partnership Act are as follows:

Alaska	Michigan	Tennessee
Idaho	Minnesota	Utah
Illinois	New Jersey	Virginia
Maryland	New York	Wisconsin
Massachusetts	Pennsylvania	Wyoming

Law of Agency

DEFINITION.—Briefly, an agent may be defined as "one who acts for, or in place of, another denominated the principal, in virtue of power or authority conferred by the latter, to whom an account must be rendered." (*Rowe* v. *Rand*, 111 Ind. 206.)

The relationship of agency is comprehensively defined by Mechem as: "A legal relation, founded upon the express or implied contract of the parties or created by law, by virtue of which one party, **the agent,** is employed and authorized to represent and act for the other, **the principal,** in business dealings with third persons."

An agent may be known as such or may be known under a distinctive title, as attorney, consignee, clerk, factor, etc.

OTHER SIMILAR RELATIONS.—Since the law differs as to agency, master and servant, independent contractor, licensee, and trustee, the distinctive features of each will be discussed.

Servant.—"The words 'agent and servant' are not wholly synonymous; both, however, relate to voluntary action under employment, and each expresses the idea of service. The service performed by a servant for his employer may not be inferior in degree to work done by an agent for his principal. A servant is a worker for another under an express or implied employment, so also is an agent, only he works, not only for, **but in the place of,** his principal." (*Reo* v. *Treadwell*, 69 Cal. 226.) The California Civil Code defines an agent as one who represents another in dealings with third persons and in No. 2295 defines a servant as one employed to render personal service entirely under the direction and control of the employer. While the relationship is similar and the cases not in harmony to produce a rule of universal application to differentiate between agent and servant, the distinction made by the California Civil Code is probably the best test. This may be summarized: An agent is employed to establish contractual relations between his principal and third persons, whereas a servant is not.

Independent Contractor.—A principal is liable for the acts of his agent while acting within the scope of his authority, whereas the acts of an independent contractor are his own for which he alone is responsible. The distinguishing feature lies in the retention and control of the means of carrying out the object of the relationship. If the employer retains the right of general control and management of the work, he makes the employee his agent, but if the employer leaves the choice of means and methods, he makes him an independent contractor. (*Lawrence* v. *Shipman*, 36 Conn. 586.)

Licensee.—A licensee is one receiving permission to do a certain thing for which the one granting the permission is not responsible. *Murphy* v. *Emigration Com.* (28 N. Y. 134) holds: "In some cases permission is granted by one person to another which under the conditions may amount to a mere license to do some act or acts on his own responsibility."

Trusteeship.—While an agent and a trustee are similar in that they hold a fiduciary relation to their principal and *cestui que trust*, respectively, the essential difference lies in the title to property. In a trusteeship the title lies in the trustee but in agency the title remains in the principal.

WHO MAY BE A PRINCIPAL.—"Any person capable of transacting his own business may appoint an agent to act in his behalf in all ordinary affairs of life." (*Caley* v. *Morgan*, 114 Ind. 350.) A person must be *sui juris*, i.e., capable of entering into an enforcible contract before he can become a principal. There are certain personal affairs which cannot be delegated to an agent, such as contracting a marriage or making a will. Citizens of nations at war with one another cannot become principal or agent of one another.

WHO MAY BE AN AGENT.—The general rule is that anyone may act as an agent except an insane person incapable of following instructions or of exercising discretion, or an infant of tender years. A person having interests incompatible with those of the principal is disqualified under the law to take the agency.

METHOD OF CREATING AGENCY.—Agency may be created by contract, express or implied, estoppel, operation of law and necessity, and ratification.

Creation by Express Contract.—To establish the relation of agency by contract, all the elements necessary to support a simple executory contract are necessary, which are as follows:

1. Mutual assent—must be contract of employment, express or implied.
2. Consideration is required in executory contract to act as agent.
3. Intention—implied or express.
4. Notification—agent must be notified before appointment becomes effective.

In general, no particular form or words are necessary so long as the context fulfils the above requirements.

In certain instances the statute law requires certain formalities, as in writing or under seal. The purpose of the agency governs in such cases and rests on the principle that an agent's authority must be of the same degree as the acts he is called on to do. If he is to execute sealed instruments his authority must be under seal, likewise if the law (Statute of Frauds, for instance) requires him to execute contracts in writing, his authority or appointment must be in writing.

Creation by Implied Contract.—Probably the most common method of creating agencies is where the relationship is implied from the surrounding

facts and circumstances, as where, for instance, from the course or previous dealings, habits, or actions of the principal it is implied that another is his agent. An agent under an implied contract is a real agent with all the rights and liabilities of an agent in his relations with his principal and outside parties.

Creation by Estoppel.—An agency created under the doctrine of estoppel is one implied under the law for the protection of outside parties wherein the principal is held responsible for the acts of the apparent agent. The agent in fact is no agent at all and as to the principal he has no rights. The elements necessary to establish an agency by estoppel are:

1. A false holding out by a person that he is the principal.
2. Reliance by third parties on such holding out.
3. Parting with value by the third party as a result of the actions indicated in (1) and (2).

The false holding out may be done by words, acts, past dealings, particular circumstances, or any combination of them which would lead a reasonably prudent person to believe that the facts were true. Parting with value means giving up any legal right whereby his position is changed. The rule is that, "where one has reasonably and in good faith been led to believe from the appearance of authority which a principal permits his agent to have and because of such belief has in good faith dealt with the agent, the principal will not be allowed to deny the agency, to the prejudice of one so dealing." (*Columbia Mills Co.* v. *Nat. Bank of Commerce*, 52 Minn. 224.)

Creation by Operation of Law.—During the continuance of certain legal relations between parties the courts imply that an agency exists. Such relations are in:

1. **Partnership,** where each partner is an agent for the firm and can bind the firm within the sphere of activities usually found in such a business. In a trading firm a partner may bind the firm to contracts of the business, and issue commercial paper in the firm name. However, in a non-trading firm, such as a partnership of professional men, accountants, lawyers, etc., a partner's agency for the firm is more restricted. For instance, he never has authority, unless expressly given to him by the other parties, to issue commercial paper.

2. **Husband and wife,** where the law implies that the wife is the agent of the husband to purchase necessities of life for herself and children. These necessities are such food, clothing, and articles as are reasonably required for the health and comfort of persons in the station of life of the husband and wife.

Creation by Ratification.—An unauthorized act of a person in behalf of another may be ratified by such other, thereby constituting the person an agent from the beginning. It is "the voluntary assumption, on full information, of an unauthorized act or agreement by the party in whose behalf it was done or made." (*St. Louis Gunning Adv. Co.* v. *Wanamaker*, 115 Mo. App. 270.) Such ratification is equivalent to original authority of the agent and confirms this act but does not change or make a new contract.

In ratification there must be some authority which the agent has exceeded. The act must have been done in the name of a known or ascertainable principal who exists. The principal must have been competent as such when the act was done and must have full knowledge of all material elements of the act before ratification is effective. The act or transaction must be ratified in its entirety and cannot be accepted in part and rejected in part without the consent of the party with whom the contract was made.

To make ratification effective it must be communicated and must follow the general rule required to give the agent his original authority. "The ratification of a contract requires the same observance of the same formalities as the making of a valid contract." (*Acuna* v. *Ilailo*, 2 Philippine 217.)

Ratification does not equal authority in the following. Third parties are not bound by the act of the agent in such cases until the act is ratified by the principal. After an unauthorized contract is made by an agent, exceeding his authority, and outside parties have acquired an interest in the subject matter, they are protected in their interest provided it was obtained without knowledge on their part of the unauthorized contract, and before ratification.

Creation by Adoption.—An act by an ostensible agent may be adopted by a principal as his act, thereby obtaining the rights and incurring the liabilities of the relationship of principal and agent.

Distinction Between Ratification and Adoption.—"In their primary significance, there is a manifest distinction between 'adoption' and 'ratification.' The one signifies to take and receive as one's own that with reference to which there existed no prior relation either colorable or otherwise; while the other is a confirmation, approval or sanctioning of a previous act, or an act done in the name or on behalf of the party ratifying, without sufficient or legal authority, that is to say, the confirmation of a voidable act." (*Schreyer* v. *Turner Flouring Mills Co.*, 29 Or. 1.)

REPUDIATION.—A principal must have full knowledge before he can be deemed to ratify the acts of his agent. If he wishes to repudiate the acts of an agent who has exceeded his authority, he must do it with reasonable promptness. "The cases abound in such remarks as that a principal must disavow the conduct of an agent done in excess of authority, in a reasonable time after getting notice of it, on pain of being deemed to have assented to the conduct." (*St. Louis Gunning Adv. Co.* v. *Wanamaker*, 115 Mo. App. 270.) In case the act is that of a person having no authority at all as an agent, repudiation is not called for. "A failure to disavow the act of a mere volunteer who meddlingly assumes to act without authority, as the agent of another, will not constitute a ratification." (*Robbins* v. *Blanding*," 87 Minn. 246.)

KINDS OF AGENTS.—

General Agent.—One appointed or held out as such by his principal to conduct all of his business or all of a particular business. His authority is general and the principal is bound to outsiders by all the acts of such an agent within the scope of his authority, even though it is beyond the specific instructions of the agent.

Special Agent.—One appointed for a single act or specific purpose, limited by the restrictions imposed by the principal, who is bound only by acts of the agent expressly authorized by him. All persons dealing with a special agent must ascertain the extent of his authority and failure to do so is at their peril.

Public Agent.—Those who act for government, state, city, or other political subdivision of a nation.

Ostensible Agent.—"One whom the principal, either intentionally or by want of ordinary care, induces third persons to believe to be his agent, although he has not, either expressly or by implication conferred authority on him." (*Farmers etc. Bank* v. *Butchers etc. Bank*, 16 N. Y. 125.)

Joint Agents.—Two or more persons authorized to act together for another **are joint agents.** To bind the principal they must act together. The acts

of less than all are not binding on the principal unless specifically authorized by the principal.

Subagents.—A fundamental proposition in law is that a delegated authority cannot itself be delegated. For instance, a director of a corporation elected by stockholders cannot delegate his duties as director to another. Likewise, any other agent cannot delegate his authority to a subagent, unless specifically authorized, on the ground that agency is a personal trust calling for the exercise of skill and discretion on which the principal relies.

TERMINATION OF THE AGENCY.—The relation of agency may be terminated: (1) by acts of the parties, or (2) by operation of law.

1. **Acts of the Parties.**—
   - (a) **At will**—where no time limit or definite object is set forth.
   - (b) **Agreement**—the principal and agent may contract that the agency shall cease.
   - (c) **Expiration of the time** in the original contract of agency or the time of its subsequent extension.
   - (d) **Completion of the objects** of the agency as originally agreed upon.
   - (e) **Revocation of authority** by the principal, who may terminate the agency except where the agency is irrevocable.
   - (f) **Renunciation** of the agency by the agent.

In revocation and renunciation the principal and agent, respectively, are liable for damages for a breach of contract except where the other party contributes cause. In renunciation such cause would be the failure of the principal to furnish the place, tools, or the facilities, or in revocation would be where the agent became incapacitated or refused to do his duties.

2. **Operation of Law.**—The relation of agency may be terminated by operation of law by any one of the following acts:
   - (a) **Death** of principal or agent. The estate of neither party can be held for completion of performance or for subsequent earnings.
   - (b) **Insanity** of principal or agent.
   - (c) **Bankruptcy** of either party will terminate an agency relating to property of the one adjudicated bankrupt.
   - (d) **War** between nations terminates, with few exceptions, the relation of agency between the citizens of the respective countries at war.
   - (e) **Destruction** or loss of control of the subject matter of the agency; change of legal status of principal or agent brought about by operation of the civil or criminal law, as arrest, imprisonment of one of the parties, dissolution of corporation or partnership; or where the agent's interest becomes adverse to the principal.
   - (f) **Changes in the law** making the agency illegal, as where enactment of the prohibition law terminated agencies for the sale of wines, liquors, etc.

IRREVOCABLE AGENCY.—

Agency Coupled with an Interest.—When an agent has an interest of his own in the subject matter of the agency, the agency is irrevocable and he is said to have an agency coupled with an interest. "These are irrevocable by the act of the principal for they are founded upon sufficient consideration and created to subserve purposes in which another has an interest." (*Bonney* v. *Smith*, 17 Ill. 531.)

Change of Position of Agent.—Where an agent within the scope of his authority enters into contractual relations as agent with outside parties

whereby he would be personally liable, the agency is irrevocable, as for instance, if he personally warrants on proper authority goods sold for his principal who agreed to meet claims under such a warranty.

RELATION OF PRINCIPAL AND AGENT—1. DUTIES OF AGENT.—

Instructions.—"It is a well-established rule of law that an agent is bound to execute the orders of his principal whenever for a valuable consideration he has undertaken to perform them, whether reasonable or not, unless prevented by some unavoidable accident without default on his part, or unless the instructions require him to do an illegal or immoral act." (*Rectsherd* v. *St. Louis Accom. Bank*, 47 Mo. 181.)

Loyalty.—As the agency relation is of a fiduciary nature, utmost good faith is required of the agent, whose interest cannot become antagonistic to those of his principal, nor can he act for two parties of opposing interests without the consent of both parties. "The law is now well settled that the relationship of principal and agent is one involving confidence, and it is the duty of every agent to act with the most perfect good faith towards his principal, and not in any way to abuse the confidence reposed in him." (*Pommerende* v. *Bate*, 3 *Sask*. L. 51.)

Render Proper Accounts.—"It is elementary law that all profit made or advantage gained by an agent in the execution of his agency belongs to the principal and it is immaterial whether that advantage is the result of the performance or violation of the agent's duty." (*Wells* v. *Cochran*, 84 Nebr. 278.) "As to the duty of an agent, while acting for and on behalf of his principal, there can be no doubt. When the character and nature of the business in which he is employed requires it, he should keep full, accurate and regular accounts of all his transactions, of his payments and disbursements, and should render, at all proper times, an account thereof to his principal, without suppression, concealment or overcharge. This duty is incident to the relation, and arises from the nature of his employment." (*Gallup* v. *Merrill*, 40 Vt. 133.)

Keep Principal's Property Separate from His Own.—It is an important duty of an agent to keep separate and distinct from his own the property of his principal. If he fails to do so and loss of intermingled funds or property, his own and his principal's, results he is personally liable for such loss.

Skill and Diligence.—Competent skill as well as fidelity may be legally demanded of an agent, and for a deficiency in either he is responsible. (*Redfield* v. *Davis*, 6 Conn. 439.)

2. DUTIES OF THE PRINCIPAL.—

To Provide Facilities.—The primary duty of the principal is to provide proper facilities to carry out the purposes of the agency.

Reimbursement for Expenditures.—The principal is liable for reasonable disbursements or expenses incurred by the agent in good faith in carrying out the purpose of the agency. The agent has a particular lien for such expenses as well as for commissions on property of the principal coming into possession of the agent in the course of his employment.

Compensation.—The agent is entitled to the compensation agreed upon, or if no amount is stipulated the reasonable value of the service, or the usual compensation for such service as determined by custom or usage of the trade. This compensation may be salary, wages, or commissions. As a general rule, where the compensation is by way of salary or wages, the principal is liable whether he accepts the result of the labor or not. On the other hand,

the rights of the agent to commissions are not completed until the purpose of the agency is performed.

RELATION OF AGENT AND OUTSIDE PARTIES—1. DUTY OF AGENT.—

Implied Warranty of Authority.—A person who holds himself out as an agent impliedly warrants that he is such an agent. If anyone deals with him in good faith and finds that he has no such authority, the agent may be held personally as a principal.

Undisclosed Principal.—It is the duty of an agent to disclose his principal; if he fails to do so he will be held as a principal. (*Hamlin* v. *Abell*, 120 Mo. 188.) "It is a well recognized rule of law that where an agent conceals the fact of his agency and enters into a contract in his own name, he may be treated as a principal by the party with whom he deals and may be held liable on the contract to the same extent as if he were in fact a principal in interest." (*Whitney* v. *Woodmansee*, 15 Idaho 735.)

The outside party may elect to hold either the principal or the agent. The principal cannot be held where:

1. The outside party has conclusively decided to hold the agent only.
2. Where the contract is part of a negotiable instrument.
3. Where the contract is signed and sealed in the name of the third party and the agent only.

The rule of the law in these instances is that only the parties whose names are signed to the contract are bound.

2. PUBLIC AGENTS.—Public officers, i.e., officers of the nation, state, or any political subdivision, have only such authority as is vested in them by statute. If they exceed that authority they are personally liable. They are also personally liable for torts, omissions of duty, negligence, and wrongful acts even though done in the discharge of their duties.

RELATION OF PRINCIPAL TO THIRD PARTIES.—The acts of an agent within the scope of his authority are binding upon the principal if such principal is made known. "The maxim of *respondeat superior* is founded on the principle that he who expects to derive advantage from an act which is done by another for him must answer for any injury which another may sustain from it." (*Barker* v. *Chicago etc. R. Co.*, 243 Ill. 482.) This doctrine is not confined to the contractual relations entered into by the agent on behalf of his principal. It includes frauds of the agent, his negligence and torts committed while executing the purposes of the agency. The principal is not liable for torts committed by an agent outside the scope of his duties or authority.

Knowledge coming to the agent is notice to the principal. The knowledge or notice must apply to the purpose of the agency to be binding on the principal. Admissions made by an agent on matters pertaining to the agency may be proved against the principal as his own admissions.

Crimes committed by an agent are not chargeable against the principal even though committed by the agent while transacting the purpose of the agency, unless the principal directed or knowingly permitted the agent to commit the crimes.

DUTIES OF THIRD PARTIES.—Persons dealing with agents should inquire into the authority of the agent; failure to do so is at their peril. "Where the nature of the transactions with an agent shows that his power must necessarily be contained in a written document, persons dealing with

him are charged with the duty of inquiring as to the extent of his authority and can recover for no loss, resulting from their failure to discharge this duty." (2 C. J. Agency, citing *Thomas Gibson Co.* v. *Carlisle*, 3 Ohio S. & C. P. 27.)

AUTHORITY OF AN AGENT.—Acts of a person acting as an agent but without authority are not binding on the presumed principal. The agent alone can be held liable.

The **express authority** of an agent is that set forth specifically, written or oral, when the agency is created.

The **implied authority** is that which is necessary and usual to carry out the agency. "The implied powers and authority of an agent depend largely upon the circumstances in each case, and upon what is necessary or reasonable to enable him to effect the purpose of his agency." (*Nat. Bank of Republic* v. *Baltimore Old Town Bank*, 112 Fed. 726.)

"Direct authority will carry with it by implication of law such powers as are suitable and reasonably necessary to accomplish the intended purposes, although no secondary or incidental powers were mentioned between the principal and agent." (*Hacket* v. *Van Frank*, 105 Mo. App. 384.)

AUTHORITY OF AGENTS FOR SPECIAL PURPOSES.—The general rule is that an agent's authority must be of equal tenor as the acts he is required to do to carry out the purposes of the agency. Where the Statute of Frauds requires an agent's act to be in writing, his authority must be in writing. When the law requires the acts of the agent to be under seal, his authority must be under seal. Such cases are powers of attorney, execution of deeds, bonds, etc. In other cases oral authority is sufficient.

To Sell Real Estate.—Authority to sell real estate must be clear and specific and cannot be inferred. To convey title the agent must have authority under seal.

Negotiable Instruments.—"Authority to execute notes and bills of exchange must be express and special." (*Lafourche Transp. Co.* v. *Pugh*, 52 La. Ann. 1517.)

To Manage Business.—An agent appointed to manage his principal's business has implied powers necessary to carry on the business. Such an agent may make financial statements of the business, waive claims, compromise actions, modify contracts, rent or lease property, and hire employees. The limitations are that he must confine himself **to conducting the business** and cannot dispose of it nor can he make permanent improvements or alterations.

REQUISITES OF AGENT'S CONTRACTS—

Under Seal.—To be binding on his principal a sealed contract executed by an agent must clearly set forth that the contract and acts enumerated therein are those of the principal and not the agent and that the seal is the seal of the principal; otherwise the covenants will be construed as those of the agent. The instrument should be signed with the principal's name, followed preferably immediately by the signature of the agent setting forth the fact of agency as

John Jones,
By John Doe, his agent.

Simple Contract.—The care or precision required in sealed instruments does not apply with the same strictness to written contracts not requiring seals. Written contracts, however, should be in the name of the principal and signed by the agent in his representative capacity by signing his principal's name and his own as agent. (*Mears* v. *Morrison*, 1 Ill. 223.)

Law of Bailments

DEFINITION.—A bailment is "a contract by which goods are delivered by one person to another for a certain purpose, upon an express or implied promise by the bailee to return them to the bailor, or to deliver them to some one designated by him, after the purpose has been fulfilled. (*State* v. *Chew Muck You*, 20 Or. 215.)

NATURE AND ELEMENTS.—Bailment is a contractual relation in which there must be delivery and acceptance, i.e., lawful possession of some kind of personal property in existence which is to be returned in the same or some altered form.

Delivery of the property may be actual or constructive. (*Van Wagoner* v. *Buckley*, 148 App. Div. [N. Y.] 808; *Ex parte Fitz*, 9 Fed. Cases No. 4837.)

Acceptance.—Responsibilities of a bailee cannot be thrust upon a person without his consent. (*Van Wagoner* v. *Buckley*, 148 App. Div. [N. Y.] 808.) "The person who is sought to be charged must accept the property, because the relation is founded upon contract, and the duty and liability springing therefrom cannot be thrust upon one without his knowledge or consent." (*Bertig* v. *Norman*, 101 Ark. 75.)

Return of Property.—"The power to require the restoration of the subject of the agreement is an indelible incident of a contract of bailment." (*In re Columbus Buggy Co.*, 143 Fed. 859.)

BAILMENTS DISTINGUISHED FROM OTHER CONTRACTS.—

From Sales.—In sales title passes, whereas in bailment title remains in bailor. (*Sturm* v. *Baker*, 150 U. S. 312.) "If the identical thing delivered is to be returned, it is a bailment, and there is no transfer of title; but if the one to whom it is delivered may return another thing of the same kind, or an equivalent in the form of money, or otherwise, it will ordinarily constitute a sale and effect a change of title." (*Scott Min. etc. Co.* v. *Shultz*, 67 Kan. 605.)

If articles are delivered, work done on them, and the same articles are to be returned, it is a bailment. "Thus, where logs are delivered to be sawed into boards, or leather to be made into shoes, rags into paper, olives into oil, grapes into wine, wheat into flour, if the product of the identical articles delivered is to be returned to the original owner in a new form, it is said to be a bailment, and the title never vests in the manufacturer. If, on the other hand, the manufacturer is not bound to return the same wheat or flour or paper, but may deliver any other of equal value, it is said to be a sale or a loan, and the title to the thing delivered vests in the manufacturer." (*Laflin etc. Powder Co.* v. *Burkhardt*, 97 U. S. 110.)

From Conditional Sales.—"The most approved test lies in ascertaining whether there was a promise to pay for the goods. If so, as a general rule, the transaction will be declared a conditional sale rather then a bailment." (*Norton* v. *Fisher*, 113 Iowa 595.) Rental and instalment contracts of sale are regarded as conditional sales and not bailments. (*In re* Caldwell Mach. Co., 215 Fed. 428.) (*Smith* v. *Aldrich*, 180 Mass. 367; *Central Union Gas Co.* v. *Browning*, 210 N. Y. 10.)

Consignments Are Bailments.—"Where there is no attempt at evasion, but the contract is one of pure agency, providing for a consignment of goods to be paid for at a fixed price out of the proceeds of the goods when sold, this is a bailment for sale not a sale with reservation of title, and the title remains in the consignor, until the goods are sold to a *bona fide* purchaser for value." (*Barnes Safe etc. Co.* v. *Block Bros. Tobacco Co.*, 38 W. Va. 158.)

From Goods on Memorandum.—"Where goods are delivered on memorandum to be paid for when sold it is a sale and not a bailment." (*MacArthur* v. *Wilder*, 3 Barb. [N. Y.].)

From Mortgage.—"A radical distinction between a bailment and a mortgage is that by a mortgage the general title is transferred to the mortgagee subject to being revested by the performance of the condition, but in case of a bailment the bailor retains the general title in himself and parts with the possession for a special purpose." (*Walker* v. *Staples*, 5 Allen [Mass.] 34; also *White* v. *Phelps*, 14 Minn. 27.)

CLASSIFICATION OF BAILMENTS.—Bailments may be variously classified, but for this purpose may be classified as bailments for: (1) mutual benefit; (2) benefit of bailor, and (3) benefit of bailee.

Mutual Benefit.—Such bailments include pledge, hire for use of a thing, hire for services, and work on a thing delivered. (*Young* v. *Leary*, 135 N. Y. 569; *Spafford* v. *Dodge*, 14 Mass. 66.) A loan from which the lender gains a benefit as well as the borrower is a bailment of this class.

Sole Benefit of Bailor.—A bailment for the sole benefit of the bailor is where personal property is kept for the depositor without reward. There are two kinds of such bailments: **deposits** and **mandates.** (*Lyons First Nat. Bank* v. *Ocean Nat. Bank*, 60 N. Y. 278.) "Another distinction is said to be the fact that in a deposit the principal object is the custody of the thing and the service and labor are merely accessory, but that in a mandate the service and labor are the principal object and the thing merely accessory."

Sole Benefit of Bailee.—"To constitute a bailment of this kind there must be a thing lent, it must be lent gratuitously; it must be lent primarily for the use of the bailee, and the specific article must be returned at the termination of the bailment." (Story on Bailments, pp. 223–228.)

RIGHTS AND LIABILITIES OF PARTIES.—The rights and liabilities of the parties are determined from the contract, express or implied, between them.

DUTIES OF PARTIES IN BAILMENTS.—

For Mutual Benefit.—Reasonable care is required of the bailee in the use of the thing, and in case of hiring it is impliedly warranted by the bailor that the thing hired is fit for the purpose for which it is hired. In the absence of the contract the bailee is held to the exercise of ordinary care in relation to the subject matter and is responsible only for ordinary negligence. (*N. Y. Central R. Co.* v. *Lockwood*, 17 Wall. 357; *Mayer* v. *Brensinger*, 180 Ill. 110; *Ouderkirk* v. *Central Nat. Bank*, 119 N. Y. 263.)

For Sole Benefit of Bailor.—The bailee is bound to exercise only slight care and is responsible only for gross neglect or bad faith. (*Carlisle First Nat. Bank* v. *Graham*, 100 U. S. 699; *Gray* v. *Merriam*, 148 Ill. 179.) The bailee may not use the property for his own purpose nor derive any benefit from it. (*Boston etc. Smelting Co.* v. *Reed*, 23 Colo. 523.)

For Sole Benefit of Bailee.—The bailee is held to exercise great care and extraordinary diligence in relation to the subject matter and is responsible for slight neglect. (*Hagebush* v. *Ragland*, 78 Ill. 40; *Scranton* v. *Baxtor*, 6 N. Y. Sup. 5.) He is not responsible for reasonable wear and tear or for the utter loss of the subject matter without neglect attributable to him, provided it was used in the manner anticipated by the bailor. But an unauthorized use of the thing bailed renders the bailee liable for loss even though it is from some inevitable casualty. (*Ross* v. *Southern Cotton Oil Co.*, 41 Fed. 152.)

The rule of law is that "if the thing borrowed is used in a different manner, or for a different purpose, or for a longer time, than was agreed by the parties, the borrower is guilty of conversion and is answerable for all damage, and even for a loss which due care could not have prevented." (*Raynor* v. *Sheffler*, 79 N. J. L. 340.)

The bailor is not responsible to the bailee for any unknown defect in the article or for injury caused thereby. It is implied in a bailment for the benefit of the bailee that he takes care of the thing and keeps it in good order. (*Booth* v. *Terrel*, 16 Ga. 20.)

TITLE OF PROPERTY.—The title remains in the bailor and is not affected by unauthorized acts of the bailee. (*Austin* v. *Dye*, 46 N. Y. 500; *Benner* v. *Puffer*, 114 Mass. 376.) The bailor may assert his title not alone against the bailee but also against creditors of or those claiming through the bailee. "Where property is taken by due process of law, the bailee may deny the title of the bailor." (*The M. M. Chase*, 37 Fed. 708; *French* v. *Star Union Transfer Co.*, 134 Mass. 288.)

Sale or Transfer.—A bailee cannot, in the absence of statute, sell or transfer the property so as to give title even to one acting without the knowledge of the bailee's status.

INSURANCE.—Either party may insure the subject matter. Where a bailee has undertaken to insure the property by either express or implied contract or by usage of trade, he is presumptively required to insure it for its full value. (*Broussand* v. *South Texas Rice Co.*, 103 Tex. 535.)

COMPENSATION.—The bailee of a contract of bailment for mutual benefit is entitled to compensation. "If service is to be rendered the subject matter of the bailment, there must be compensation for the service unless the bailment be a mandate." (*Union Stockyards Co.* v. *Western Land etc. Co.*, 59 Fed. 49.)

BAILEE'S LIEN.—"This right is a right to retain the property in his possession until the charges for the work and expenses upon the identical property are paid. It is a right to retain only, not an interest in the property, and therefore depends upon the actual possession. This possession is said to be the essence of the right. If this be once voluntarily given up, the lien is lost." (*Moulton* v. *Greene*, 10 R. I. 330.)

General Balance.—A bailee is not entitled to a lien on property in his possession for a general balance of account. (*Honig* v. *Knipe*, 25 Mo. App. 574.)

SHOPKEEPER'S LIABILITY FOR CUSTOMERS' CLOTHES.—A shopkeeper is liable as an ordinary bailee for hire for any loss resulting from ordinary negligence. "Whatever garment or article the customer is obliged to lay aside for the purposes of the trading is, in contemplation of law, given into the hands of the shopkeeper and so remains until the transaction is completed." (*McAllister* v. *Simon*, 27 Misc. [N. Y.] 214.)

REDELIVERY.—"The obligation to redeliver or deliver over the property at the termination of the bailment on demand is an essential part of every bailment contract. If the bailee fails to do so, he is liable, unless he can show that his inability arises without fault on his part." (*Hanes* v. *Shapiro*, 168 N. C. 24.) A refusal to redeliver where no lien exists will amount to conversion. (*Alton* v. *Taxicab Co.*, 66 Misc. [N. Y.] 191.)

Excuses for Non-Delivery.—A bailee is excused from making delivery where:

1. The subject matter is lost or destroyed without his fault. (*Young* v. *Leary*, 135 N. Y. 569.)

2. Property is tendered to bailor in accordance with the terms of the contract.

3. Property was delivered to third parties at the direction of the bailor.

4. Goods are taken from the bailee by due process of law, in which case he must notify the bailor. (*Bliven* v. *Hudson River R. Co.*, 36 N. Y. 403.)

TERMINATION OF BAILMENT.—Bailments may be terminated by agreement, lapse of time, fulfilment of the object, act of bailee inconsistent with his duties (*Atlantic Bldg. Supply Co.* v. *Vulcanite Cement Co.*, 203 N. Y. 133; *Ross* v. *Southern Cotton Oil Co.*, 41 Fed. 152), or by destruction of subject matter.

Law of Insurance

DEFINITION.—"A contract of insurance is an agreement by which one party for a consideration, which is usually paid in money and called the premium, promises to make certain payments of money upon the destruction or injury of something in which the other party has an interest." (*U. S. Credit System Co.* v. *Claflin*, 165 Mass. 501.) "The contract of insurance, as all know, is a contract of indemnity, upon the terms and conditions specified in the policy of insurance. It is a peculiar contract and one of hazard purely. The insurer undertakes, for a comparatively small premium, to guarantee the insured against loss or damage, upon the exact terms and conditions agreed on, and upon no other." (*Glendale Woolen Co.* v. *Protection Ins. Co.*, 21 Conn. 19.)

NECESSARY ELEMENTS.—That a contract of insurance may be complete, the following five elements must be present:

1. Subject matter insured
2. A risk to be insured against
3. The amount of indemnity
4. The duration of the risk
5. The premium of insurance (*Tyler* v. *New Amsterdam F. Ins. Co.*, 4 Rob. [N. Y.] 151.)

CONTRACT OF INDEMNITY.—Indemnity is an essential element and the primary purpose of insurance. A contract that does not possess this element is not one of insurance. (*Vredenburgh* v. *Physicians' Defense Co.*, 126 Ill. App. 509.)

INSURABLE INTEREST.—Unless a person has an interest in the property, he cannot insure it, so as to recover in the event of a loss. (*Sweeney* v. *Franklin Fire Ins. Co.*, 20 Pa. 337.)

What Constitutes Insurable Interest.—"It would seem, therefore, that whenever there is a real interest to protect and a person is so situated with respect to the subject of insurance that its destruction would or might reasonably be expected to impair the value of that interest, an insurance on such interest would not be a wager within the statute, whether the interest was an ownership in, or a right to the possession of the property, or simply an advantage of a pecuniary character having a legal basis, but dependent upon the continued existence of the subject. It is well settled that a mere hope or expectation, which may be frustrated by the happening of some event, is not an insurable interest." (*Riggs* v. *Commercial Mutual Ins. Co.*,

125 N. Y. 7.) An insurable interest may be legal or equitable, vested or contingent.

"**The test of insurable interest** is whether an injury to the property or its destruction by the peril insured against would involve the assured in pecuniary loss." (*Berry* v. *American Cent. Ins. Co.*, 132 N. Y. 49.)

Time of Insurable Interest.—In fire and marine insurance the insurable interest must exist in the insured at the time the risk is placed as well as at the time of the loss. In life insurance it must exist at the time the contract is made but may cease at any time thereafter.

THE CONTRACT.—

Form of Contract.—A contract of insurance need not be in writing, in the absence of legislative requirement. (*International Ferry Co.* v. *American Fidelity Co.*, 207 N. Y. 350.) In many states a form of fire insurance contract is prescribed by statute approaching more or less the form outlined in the Insurance Laws of New York.

Nature of Contract.—A contract of insurance on property is personal with the insured and does not pass with the property upon transfer to new owners. (*Lett* v. *Guard Fire Ins. Co.*, 125 N. Y. 82.)

Assignability of Contract.—Fire insurance contracts cannot be assigned without consent of insurer. Marine policies, however, are assignable at any time without consent of insurer. Life insurance policies payable to the estate of the insured may be assigned by him at any time, though very often such assignment is ineffectual until the insurance company is notified. In life insurance policies where a third party is designated as the beneficiary, he will have a vested right in the policy and it cannot be assigned without his consent.

What Law Governs.—The U. S. Supreme Court says: "Contracts are to be governed as to their nature, their validity and their interpretation, by the law of the place where they were made unless the contracting parties clearly appear to have had some other law in view." (*Liverpool etc. S. Co.* v. *Phoenix Ins. Co.*, 129 U. S. 397.)

RELATION OF INSURER AND INSURED.—The relation existing between insurer and insured is one of **debtor and creditor.** The policyholder is a creditor and cannot compel the company to disclose to him internal company affairs.

CONCEALMENT.—A contract of insurance is one requiring good faith between insurer and insured. Fraudulent dealings are fatal to the rights of the party responsible for it. In marine insurance concealment of a material fact whether innocent or fraudulent avoids the contract. (*Howe Machine Co.* v. *Farrington*, 82 N. Y. 126.) In life and fire insurance concealment must be intentional to avoid the contract when not made the subject of special inquiry by the insurers. (*Washington Mills Mfg. Co.* v. *Weymouth Ins. Co.*, 135 Mass. 503.)

REPRESENTATION.—A representation is a statement of facts made at the time of, or before, entering on the contract regarding the subject matter to be insured, upon which basis the contract of insurance is made. A material misrepresentation avoids the contract. Substantial compliance with the representations must be made. (*Smith* v. *Aetna Ins. Co.*, 49 N. Y. 211.)

Opinion.—A mere expression of opinion, although erroneous, or a hope or exaggerated expectation, unless made in bad faith, does not affect the contract and cannot be construed as a misrepresentation of facts. (*Nat. Bank* v. *Ins. Co.*. 95 U. S. 673.)

WARRANTY.—A warranty is a statement of fact or promise regarding the subject matter of insurance which becomes part of the contract either by insertion in the policy itself or by being made a part of it by reference. Warranties must be true, and strictly complied with; otherwise a policy will be avoided. (*Cushman* v. *U. S. Life Ins. Co.*, N. Y. 404.)

Distinctions—Representation and Warranty.—"The crucial distinction between a representation and a warranty is that the one is not, and the other is, a part of the contract between the parties." (*Miller* v. *Commercial Union Assur. Co.*, 69 Wash. 529.) "A representation is collateral to the contract and to be effective must be material to the risk; but a warranty, whether material or not, being part of the contract, has the force of a condition precedent, and unless it is true the insurer is not bound by his promise." (*Donley* v. *Glen Falls Ins. Co.*, 184 N. Y. 107.)

Breach of Warranty.—A breach of warranty, misrepresentations, or intentional concealment of a material fact, even though not the cause of loss, voids the policy because the risk of insurance becomes a different one from the one the insurer undertook to carry. (*Bank of Balston Spa* v. *Ins. Co.*, 50 N. Y. 45; *Clements* v. *Connecticut Indemnity Co.*, 29 App. Div. [N. Y.] 131.)

WAIVER AND ESTOPPEL.—An act by the insurer recognizing the policy as valid after knowledge of a breach will estop the company from taking advantage of the forfeiture. The rule laid down by the U. S. Supreme Court is: "Any agreement, declaration, or course of action on the part of an insurance company which leads a party insured honestly to believe that by conforming thereto a forfeiture of his policy will not be incurred, followed by due conformity on his part, will and ought to estop the company from insisting upon the forfeiture, though it might be claimed under the express letter of the contract." (*Ins. Co.* v. *Eggleston*, 96 U. S. 572.)

MARINE INSURANCE—IMPLIED WARRANTIES.—In marine insurance there are three implied warranties which are as important and of equal weight as if they were written into the policy itself. These are: seaworthiness, deviation, and legality of the adventure.

That **a ship is seaworthy** means "that she shall be in a fit state as to repairs, equipment, and crew, and in all other respects, to encounter the ordinary perils of the voyage insured at the time of sailing upon it." (*Dixon* v. *Sadler*, 5 M. & W. [England] 405; also *Thebaud* v. *Great West. Ins. Co.* 155 N. Y. 516.)

Deviation.—That there shall be no voluntary departure from the course followed in ordinary mercantile usage and no unreasonable delay in prosecuting the voyage. (*Burgess* v. *Equitable Marine Ins. Co.* 126 Mass. 70.)

Legality.—The voyage must be for a legal purpose and conducted in a legal manner. (*Redmond* v. *Smith*, 7 M. & G. [England] 457.)

GENERAL AVERAGE.—"General average is a contribution by the several interests engaged in a maritime venture to make good the loss of one of them for voluntary sacrifice of a part of the ship or cargo to save the residue of the property and the lives of those on board from an impending peril or for extraordinary expenses necessarily incurred for the common benefit and safety of all." (*California Canneries Co.* v. *Canton Ins. Co.*, 25 Cal. App. 303.)

PARTICULAR AVERAGE.—Particular average is a loss occurring to the ship or cargo which is not to be shared by contribution among all those interested but must be borne by the owner of the ship or part of cargo to which the loss or injury occurs. (*Bargett* v. *Insurance Co.*, 5 Bosw. [N. Y.] 395.)

COINSURANCE.—In marine insurance in the event of a loss the insured can only recover the proportion of the loss that the face of the policy bears to the entire value of the property. This limits the recovery unless the property is fully insured or there is a total loss, and in effect makes the insured a coinsurer.

In fire insurance the insured recovers the amount of the loss up to the face of the policy, except in those cases where the policy is issued with a coinsurance clause. The usual custom is to issue policies at a reduced premium with an 80% coinsurance clause. This means that the insured must carry insurance on his property up to 80% of its value and if he fails to carry that amount he will become a coinsurer and bear a proportion of the loss in case of fire.

Formula for determining the amount of loss to be paid by the insurance company on policies issued with an 80% coinsurance clause:

Let x = amount to be recovered.
V = value of property.
P = amount of policy.
L = the loss.

Formula

$$x = \frac{P\,L}{.80\,V}$$

PROOF OF LOSS.—Fire insurance policies generally require that the insured shall give the company immediate notice in case of fire and furnish proof of loss within 60 days after fire. The insured must use reasonable diligence to fulfil these requirements to protect his rights under the policy.

SUBROGATION.—"In fire insurance, as in marine insurance, the insurer, upon paying the assured the amount of the loss of the property insured, is doubtless subrogated in a corresponding amount to the assured's right of action against any other person responsible for the loss. But the rights of the insurer against such other person does not rest upon any relation of contract or of privity between them. It arises out of the nature of the contract of insurance as a contract of indemnity, and is derived from the assured alone; and can be enforced in his right only. By the strict rules of the common law, it must be asserted in the name of the assured. In a court of equity of or admiralty, or under some state codes, it may be asserted by the insurer in his own name, but in any form of remedy the insurer can take nothing by subrogation, but the rights of the assured, and if the assured has no right of action, none passes to the insurer." (*St. Louis, I. M. & S. Ry. Co.* v. *Commercial Union Ins. Co.*, 139 U. S. 235.)

Law of Sales

DEFINITIONS, ETC.—A sale is "an exchange of goods or property for money paid or to be paid." (*Hatfield* v. *State*, 9 Ind. App. 296.) "A transfer, in pursuance of a valid agreement, from one party, called the seller, to another, called the buyer, of the general or absolute title to a specific chattel, for a price, or a consideration estimated in money." (Mechem Sales, § 1.)

Elements of a Sale.—The essence of a sale is transfer of property from the seller to the buyer for a price in money.

Requisites.—These are existence of the subject matter, either actual or potential, an agreed price in money, parties (buyer and seller) capable of contracting, and mutual assent.

Contract to Sell.—A contract to sell, often called an executory sale, is a contract whereby the seller agrees to transfer the title to personal property to the buyer at an agreed price. The elements required for a sale are necessary in a contract to sell except that the goods need not be in existence, ascertained, or in possession of the seller at the time the contract is made.

A **sale** is a completed transaction, title to the subject matter vesting in the buyer on delivery, actual or constructive. A **contract to sell** is an agreement to consummate a sale on the completion of further acts by the parties. Title remains in the seller until the happening of some event or something further is done by the parties.

FORM OF CONTRACT.—Contracts of sale may be oral or written except in cases where the statutes require enforcible contracts to be in writing and signed by the parties to be charged. See "Statute of Frauds" mentioned herein.

CONTRACT LAW GOVERNS.—Contracts of sale are governed by general rules and laws of contracts as to competency of parties, consideration, subject matter, and mutuality.

Law of the Place of Sale Governs.—A sale is made at the place where it is executed by transfer of property to buyer. Where an order is placed by mail or telegraph and accepted at a distant place and goods are delivered to a common carrier for shipment to buyer, sale is governed by law of the place of shipment. (*Betz* v. *McMorrow*, 173 Mass. 8.) Where, however, it is the intention of the parties that title shall not pass until delivery by carrier to buyer, the law of the place of destination governs. (*Theo. Hamm Brewing Co.* v. *Young*, 76 Minn. 246.)

SUBJECT MATTER.—In a sale the subject matter must be in existence, either actual or potential. Potential existence is something which will come into actual existence by efflux of time, such as wool from sheep in possession of the seller or crops sown on seller's land.

Existence of Thing Sold.—Mutual mistake as to existence of the goods to be sold in a contract to sell renders the contract void.

Emblements or Fructus Industriales.—Cultivated products of the soil while growing and attached to the soil are considered part of the land and their sale can be consummated only in conformity with the law. On severance from the soil they are treated as personalty and may be the subject of an oral sale.

Annual crops.—The sale of annual crops is treated as a sale of goods and is not an interest in lands. (*Whitmarsh* v. *Walker*, 1 Met. [Mass.] 313.)

Natural Products of the Soil.—The natural products of the soil, such as trees and their fruit before severance, are treated as part of the real property.

Emblements, Crops, and Products of Soil Under the Uniform Sales Act.—The term **goods** includes "emblements, industrial growing crops, and things attached to or forming part of the land which are agreed to be severed before sale or under the contract of sale." (Uniform Sales Act, Sec. 76.)

SALE OF NECESSITIES.—Parties not competent to contract cannot be held on their purchase of necessities at the contract price. But under the Uniform Sales Act they may be held liable for their actual requirements at time of delivery at a reasonable price, not necessarily the sale price. (Uniform Sales Act, Sec. 2.)

PRICE.— The price is what is agreed to between the parties. But where goods are sold and delivered without a price being agreed on, there is an

implied agreement to pay a reasonable or market price for such goods. (*Rezus* v. *Moran*, 9 N. Y. S. 927.)

PLACE.—Where no place of delivery is specified under an executory contract of sale, the seller's place of business is construed as such. (*Gross* v. *Ajello*, 116 N. Y. S. 380.)

STATUTE OF FRAUDS.—At common law, sales of chattels could be made orally, but most of the states have passed statutes requiring certain sales to comply with specified requirements. The Statute of Frauds, adopted in nearly every state where Anglo-Saxon jurisprudence is the foundation of the laws, requires in substance that a sale of goods, wares, or merchandise for a price ranging from $30 to $2,500 in various states shall be unenforcible, unless:

1. The buyer accepts part of the goods so sold;
2. Gives something in part payment; or
3. Some note or memorandum is signed by the party to be charged.

Under the Uniform Sales Act the amount is $500 and upward.

Written Memorandum.—The written memorandum required under the statute may be formal, as a bill of sale, or informal, made up of several notes or letters. The essentials required are a recital of the agreement, subject matter, terms, and names of the parties. Most important is that the **memorandum shall be signed** by the person to be charged or held thereon.

Where Statute Does Not Apply.—Contract for work, labor, and services.—"It is now the settled rule that when goods contracted for exist *in solido* and are capable of delivery at the time, it is within the statute; but where they are to be made, or something is to be done to put them in a condition to be delivered, according to the terms of the contract, it is not within the statute." (*Gadston* v. *Lance*, *McMullan*, S. C. Eq. 87.)

Special Order.—A contract for goods to be manufactured for the purchaser on special order and not for the general market is a contract for work, labor and services, and not a sale. (*Goddard* v. *Binney*, 115 Mass. 450.)

PASSING OF TITLE.—In a sale title passes on delivery, which may be actual or constructive—for instance, transferring warehouse receipts or merely separating the goods. The intention of the parties governs. (*Ober* v. *Carson*, 62 Mo. 214.) If the subject matter is in a deliverable state, the title passes on payment of the price even though the article is to be delivered subsequently. Where the goods are not in a deliverable state and require something further to be done, as weighing, measuring, or separation from a larger mass, title does not pass until this is done.

What Constitutes Delivery.—Where goods are segregated from a larger mass, set aside and in shape to be delivered, title passes to the buyer. But if something further is to be done so as to make it ready for delivery, title does not pass to the buyer until that is done. To constitute delivery the goods must be placed under the control of the buyer. (*Gross* v. *Ajello*, 116 N. Y. S. 380.)

Place of Delivery.—The place of delivery is where the goods are at time of sale. This, however, is governed by the intention of the parties and usage of trade.

Delivery to a Common Carrier.—If there is a trade custom that the seller must ship the goods, delivery is complete and title passes to the buyer by delivery to the common carrier. Any loss thereafter falls on the buyer. (*Dannermiller* v. *Kirkpatrick*, 201 Pa. St. 218.)

F. o. b.—In sales made, **f. o. b.** at a given point means, "Free on board" railroad or ship at that place. The seller is under obligation to deliver the goods at his expense and title does not pass until the goods are so delivered. The carrier is the agent of the buyer.

Goods Ordered at Distant Places.—Where goods are ordered from a seller at a distant place the intention of the parties controls. Generally title passes on delivery of the goods to the common carrier. But if the seller takes the bill of lading in his own name, title is retained until the bill of lading is indorsed to the buyer.

C. o. d. Sales.—In sales, cash on delivery, most courts hold that title passes to the buyer when the subject matter is delivered to the common carrier but that the buyer is not entitled to possession until the price is paid.

Sales Subject to Approval.—In sales subject to approval title does not pass until the conditions precedent, which are examination and approval, are completed.

Goods to be Manufactured.—In a contract of sale of goods to be manufactured, title does not pass until after the goods are in a deliverable state.

Sale by Sample or Description.—Where goods are sold by description or sample, title passes when they are applied to the contract and put in a deliverable condition.

Stolen Goods.—A thief cannot convey title to goods and a person buying goods from one having larcenous possession not alone gets no title but is also liable for their conversion if he has disposed of them. (*Reichard* v. *Hutton*, 142 N. Y. S. 935.)

Goods Obtained by Fraud.—Where a seller has voluntarily parted with the title to goods to the buyer as a result of fraud on the part of the buyer, an innocent second purchaser obtains a good title and will be protected. (*Phelps* v. *McQuade*, 158 App. Div. 528.)

EXPRESS WARRANTY.—An express warranty is a statement of fact made by the seller as to the quality, quantity, durability, or other characteristic of the thing sold. To hold the seller on his warranty the buyer must have relied on the statements in making his purchase. (*Heath Dry Gas Co.* v. *Hurd*, 124 App. Div. 68; *Naylor* v. *McSwegan*, 21 N. Y. S. 930.)

Opinion and "Dealers Talk."—An expression of opinion, hope, or expectation is not a statement of fact and does not amount to a warranty. Likewise, commendatory statements as to the character of the articles and mere statements of opinion, although unfounded, are not sufficient to constitute warranties. (*Arnold* v. *Norfolk etc. Hosiery Co.*, 148 N. Y. 392.)

IMPLIED WARRANTIES.—

Title.—The seller impliedly warrants the title to the goods sold. Where a vendor has goods for sale and in his possession it is *prima facie* evidence that he has title to the goods. A seller of goods impliedly warrants:

1. That he has good title;
2. The buyer will not be disturbed by adverse claims of title; and
3. The goods are free from claims, charges, and incumbrances at the time of sale. (*Smith* v. *Ruggles*, 3 N. Y. S. 329.)

Where, however, goods are in the hands of third parties, there is no implied warranty that the title to the goods is in the seller.

Quality—Fit For Use.—If the purchaser makes known the purpose he intends to use the goods for and the seller offers articles for sale for that purpose, he impliedly warrants that they are fit for that purpose. (*McKlige* v. *Carroll*, 105 N. Y. S. 342.)

Quality—Manufacturer.—A manufacturer impliedly warrants the goods made by him to be free from latent defects of manufacture. (*Carleton* v. *Lombard Ayres & Co.*, 149 N. Y. S. 137.) Where, however, the seller is a dealer and not a manufacturer and the buyer knows it, there is no implied warranty against a latent defect of manufacture. (*Whitman* v. *Jacobson*, 119 N. Y. S. 246.)

Quality—Foodstuff.—In most jurisdictions the courts hold that a seller impliedly warrants foodstuffs sold to the consumer to be fit and wholesome for human consumption. In a few states this implied warranty extends to the wholesaler. (*Leahy* v. *Essex Co.*, 164 App. Div. 903; *Race* v. *Krum*, 147 N. Y. S. 818.)

Quality—Samples.—Goods sold by sample or description are impliedly warranted to correspond with the sample or description as to character and quality and that the goods are merchantable. (*E. T. Burrowes Co.* v. *Rapid Safety Filter Co.*, 97 N. Y. S. 1048; *Bloom* v. *Reisina*, 135 N. Y. S. 547; *Plumb* v. *J. W. Hallower & Sons Co.*, 130 N. Y. S. 147.)

DOCTRINE OF CAVEAT EMPTOR.—In sales the doctrine of *caveat emptor* applies in every state except Louisiana. Under this doctrine, which means, "let the buyer beware," it is not incumbent on the seller to disclose facts which a buyer can ascertain by examining the articles. In order to charge a seller with fraud there must be a false representation or an active suppression of facts so as to convey a false impression. (*Wolf* v. *Michael*, 46 N. Y. S. 991.)

ESTOPPEL AND WAIVER OF DEFECTS.—A buyer who has knowledge of a fraud or defect of an article purchased and retains the articles without objection, cannot at a later date set up fraud to have the sale set aside. (*Wellauer* v. *Fellows*, 48 Wis. 105.)

BUYER'S STATEMENTS OF FINANCIAL STANDING.—A merchant who gives false statements to a commercial credit-reporting agency is liable for an action for rescission and for damages to one who extended credit on the basis of the statements received by and given out by such agency, even though the representations were not made to the creditor personally and there was no specific intent on the part of the merchant to defraud his creditors by the false statements made by him. (*Mills* v. *Brill*, 105 N. Y. App. Div. 389; *Goldsmith* v. *Stern*, 84 N. Y. 869.) Mere undisclosed insolvency of a buyer does not impute fraud; intent not to pay for goods when buying is essential. (*Hirsch Lumber Co.* v. *Hubbell*, 128 N. Y. S. 85.)

REMEDIES OF BUYERS FOR BREACH OF EXPRESS WARRANTY.—In most jurisdictions the courts hold that where title has passed the sale cannot be rescinded for breach of express warranty. The buyer's remedy lies in an action for damages.

When title has not passed the goods may be rejected and the sale rescinded on discovery of the breach of warranty.

REMEDIES OF BUYERS FOR BREACH OF IMPLIED WARRANTY.—In case of breach of implied warranty the buyer has a choice of remedies. First, he may accept the goods and sue for damages for the breach. Second, rescind the sale and recover the purchase price. On the latter case he must act promptly. (*Henry Kupfer & Co.* v. *Pellman*, 121 N. Y. S. 1081.)

REMEDIES OF SELLER—RESCISSION.—Insolvency of a buyer at the time of sale is ground for rescission by the seller. (*In re* Lewis, 125 Fed. 143.)

UNPAID VENDOR.—

Lien.—When title has passed to the purchaser but the goods are in possession of the seller, he has a lien on the goods sold for the unpaid purchase price if the sale was for cash. If the sale was on credit and the terms of credit have expired or the buyer has become insolvent, the seller has the same remedy. (*Cragin* v. *O'Connell*, 169 N. Y. 573.)

Stoppage in Transitu.—This is a right of a seller of goods on credit to retake them from a common carrier on discovery of insolvency of the buyer and before the goods have come into possession of the vendee or third parties have obtained *bona fide* rights in them. The right continues as long as the goods are in possession of the common carrier. (*Jones* v. *Earl*, 37 Cal. 630; *Gass* v. *Southern Pacific Co.*, 152 App. Div. 412.)

Vendor's Rights.—A vendor who has exercised his rights to stoppage *in transitu* or has a lien, may resell the goods as agent for the vendee and sue for the difference or rescind the sale and recover title to the goods. Notice to the buyer of intention of the seller of the resale is required in some jurisdictions.

UNIFORM SALES ACT.—The Uniform Sales Act, as drafted by the commissioners appointed to work out uniform laws governing commercial transactions, combines the best features of the existing laws of the various states. The Uniform Sales Act has been adopted in the following states and territories:

Alaska	1913	New York	1911
Arizona	1913	North Dakota	1917
Connecticut	1907	Ohio	1915
Illinois	1915	Pennsylvania	1915
Maryland	1910	Rhode Island	1908
Massachusetts	1908	Tennessee	1919
Michigan	1913	Utah	1917
Minnesota	1917	Wisconsin	1911
Nevada	1915	Wyoming	1917
New Jersey	1907		

Law of Guaranty and Suretyship

GUARANTY.—

Definition.—A contract of guaranty is "an undertaking by one person that another shall perform his contract or fulfil his obligation, or that if he does not, the guarantor will do it for him." (*Gridley* v. *Capen*, 72 Ill. 11.)

Elements of Guaranty.—A contract of guaranty, although a separate and distinct contract from that of the original debtor, is a collateral undertaking to that other contract to which it relates. It is a secondary and not a primary obligation and can only be called upon to fulfil its terms upon the failure of the primary obligation.

Test—Guaranty and Suretyship.—"Where the question involved is whether the promise is original or collateral, the test is whether the credit is given to the person sought to be charged or someone else." (*Jones etc. Steel Co.* v. *Graham*, 194 Ill. App. 571.)

Requisites.—All the elements necessary to support a simple contract are required to establish a contract of guaranty. (*Davis Sewing Mach. Co.* v. *Richards*, 115 U. S. 524, a leading case on the subject.)

SURETYSHIP.—

Definition.—A contract of suretyship is "a contract by one person to be answerable for the payment of some debt, or the performance of some act or duty, in case of the failure of another person who is himself primarily responsible for the payment of such debt or the performance of the act or duty." (*Roberts* v. *Hawkins*, 70 Mich. 566.) It is "a **direct** contract to pay for the debt of another." "A contract whereby one person engages to be answerable for the debt, default or miscarriage of another." (*State* v. *Parker*, 72 Ala. 181.)

Elements of Suretyship.—Elements required to support a contract are necessary for a contract of suretyship. In addition there must be a real principal who is liable, and if there is no principal, the promisor is a principal and not a surety. The principal's obligation must be valid in order to bind the surety. If the principal is not bound on the obligation by reason of a defect, such as fraud or duress or other illegality practiced on him, the surety is not bound.

Validity of Surety's Obligation.—A surety is only liable on a valid enforcible contract against his principal. Utmost good faith is required in negotiations leading to the establishing of a contract of suretyship. False or fraudulent statements made or concealments of material facts will relieve the surety from his obligation, although the contract may be binding on the principal. To enable a surety to avoid his obligation for such reasons, it is necessary to connect the creditor with the false statements. (*Gardner* v. *McGowan*, 27 Tex. 487.)

DISTINCTIONS BETWEEN GUARANTY AND SURETYSHIP.—"The **surety** is liable as much as his principal as soon as default is made, without any demand upon the principal or notice of his default. The **guarantor's liability** is less stringent. Unless demand is made within a reasonable time, and notice given in case of default, he is discharged to the extent he may be damaged by delay." (*Hall* v. *Farmers Bank*, 23 Ky. L. 1450.) "A **surety** undertakes to pay if the principal **does not**, while a **guarantor** undertakes to pay if the principal cannot." (*McIntosh-Huntington Co.* v. *Reed*, 89 Fed. 464.) "A **guarantor** is one who undertakes by a separate and independent agreement that another person shall perform a duty which he owes to a third person. A **surety** is one who joins with another person in agreeing that such other person shall perform the duty he undertakes." (*Ricketson* v. *Lizotte*, 98 Vt. 386.)

"A **guaranty** is, perhaps, always understood, in its strict legal and commercial sense, as a collateral warranty, and often as a conditional one, against some default or event in future. The term **warranty,** on the other hand, is generally understood as an absolute undertaking in present, as well as in future, against the defect, or for the quantity or quality contemplated by the parties in the subject matter of the contract." (*Sturges* v. *Circleville Bank*, 11 Oh. St. 153.)

"The term **'warranty'** is an engagement or understanding forming a part of the transaction. It is an absolute understanding or liability on the part of the warrantor, and the contract is void unless it is strictly and literally performed. A **guaranty,** on the other hand, is a collateral promise to answer for the debt, default or miscarriage of another." (*Masons Union L. Ins. Assoc.* v. *Brockman*, 20 Ind. A. 206.)

FORM OF CONTRACT.—Under the Statute of Frauds, contracts of suretyship and guaranty must be in writing to be enforcible.

NOTICE OF DEFAULT.—The general rule is that a contract of guaranty being collateral, it is necessary for the creditor to notify the guarantor of any default by the debtor. A surety, however, need not be notified, as his obligation is absolute.

LIABILITIES OF GUARANTORS AND SURETIES.—The liabilities of sureties and guarantors are *strictissimi juris* and should not be extended by construction. The liability is confined to the precise terms of the contract. (*First National Bank of Pontiac* v. *Valentine*, 139 N. Y. 1037; *Hamilton Trust Co.* v. *Shevlin*, 141 N. Y. S. 232.) Ordinarily a guaranty refers to future debts and will be so construed in the absence of a clear intention to include accrued debts. (*Manhattan Rolling Mills* v. *Dellon*, 113 N. Y. S. 571.)

RIGHTS OF GUARANTORS AND SURETIES.—A surety or guarantor who has discharged an obligation on default of the debtor is subrogated to the position of the creditor and has a right of indemnity against the debtor. This right is limited to indemnity only and if the guarantor settles with the creditors for less than the face value of their claims, he can only recover from the debtor the amount of settlement and costs and expenses. If there are cosureties or coguarantors, he has a right to contribution of a proportionate share from each one.

DISCHARGE OF SURETIES AND GUARANTORS.—The following are some of the acts which will discharge a surety or guarantor from his liability.

1. Payment of the debt or extinguishment of the obligation by the debtor.
2. By an alteration or change in the contract without the consent of the surety or guarantor. (*Weiss* v. *Leichter*, 113 N. Y. S. 999.)
3. By extension of time by the creditor beyond the original contract without the consent of the sureties.
4. By substitution of principals or cosureties.
5. A release of one of several persons jointly bound as principals.
6. Release of the debtor by the creditor without the consent of the surety.
7. Release of one of the cosureties by the creditor releases the other sureties.
8. By an act of the creditor whereby the surety is deprived of rights against the debtor.
9. By compromise and settlement between the debtor and creditor.
10. By allowing the statute of limitations to run against the principal.
11. A guarantor is discharged if the creditor unreasonably delays bringing action against the debtor.
12. A guarantor of a note is released by a renewal of the note at maturity. (*Barnett* v. *Wing*, 16 N. Y. S. 567.)

SECTION 2

MATHEMATICS

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SECTION 2

MATHEMATICS

Logarithms

DEFINITION.—"The logarithm of a number to a given base is the exponent which indicates the power to which the base must be raised to produce the given number."[1]

"A set of logarithms x, of all numbers y, corresponding to a given base a, is a **system of logarithms.** Two systems are in use, the common, or Briggsian, system, which is used in practical computations, and the hyperbolic, or Naperian, system, which is always used in analytical work. The base of the common system is 10, while the base of the Naperian system is the number $e = 2.71827$."[2]

USE OF LOGARITHMS.—Logarithms are usually employed to reduce the work involved in the multiplication and division of numbers, and in computing powers and extracting roots. Interest computations extending over long periods are facilitated by use of logarithms. Thus the amount of $1 at compound interest for 30 periods at 6% is found by raising 1.06 to the 30th power. To perform this operation by ordinary multiplication requires a prolonged computation. This and similar processes can be much simplified by use of logarithms.

PRINCIPLE OF LOGARITHMS.—It is possible to raise any number to any desired power by multiplying the number by itself the required number of times. Thus, 2^3 means $2 \times 2 \times 2$, or 8; 3^4 means $3 \times 3 \times 3 \times 3$, or 81; 4^4 means $4 \times 4 \times 4 \times 4$, or 256; and so on. Or again,

3	to	1st	power	is	3
3	"	2nd	"	"	9
3	"	3rd	"	"	27
3	"	4th	"	"	81
3	"	5th	"	"	243
3	"	6th	"	"	729
3	"	7th	"	"	2,187
3	"	8th	"	"	6,561
3	"	9th	"	"	19,683
3	"	10th	"	"	59,049

and so on. The numbers in the second column are the indices, indicating the power to which 3 is raised to secure the number in the third column.

Illustration.—Suppose 243 is to be multiplied by 81. By ordinary multiplication, $243 \times 81 = 19{,}683$. From the foregoing table it is seen that $243 = 3^5$, and $81 = 3^4$. By a principle of mathematics known as the **law of indices,** $3^5 \times 3^4 = 3^{5+4} = 3^9$ That is, 3^5 is multiplied by 3^4 by adding the indices. The table shows that $3^9 = 19{,}683$, as has also been found by multiplication.

[1] E. B. Skinner, Mathematical Theory of Investment, p. 30.
[2] *Ibid.*

Conversely, $243 \div 81 = 3^5 \div 3^4 = 3^{5-4} = 3$; for 3 raised to the 5th power is 243, which divided by 3^4, or 81, = 3. Thus addition and subtraction are substituted in performing multiplication and division.

Suppose it is desired to extract the square root of 59,049. In the table above it is seen that this is 3 raised to the 10th power, or 3^{10}. The square root of 59,049 is, therefore, the same as the square root of 3^{10}. According to the law of indices, dividing the index of a number by 2 is equivalent to extracting the square root. Therefore, $3^{10/2}$, or 3^5, is the square root of 3^{10}. According to the table $3^5 = 243$. That this is the square root of 59,049 is seen by multiplying 243 by 243. By reversing the procedure a number may be raised to any power by simply multiplying its index by that power. Thus 243, or 3^5, may be squared by multiplying 5, the index of 3, by 2; thus $243^2 = 3^{5\times2} = 3^{10} = 59{,}049$. Likewise, $27^3 = 3^{3\times3} = 3^9 = 19{,}683$.

THE LOGARITHM.—In the above table, the numbers in the second column are the logarithms of the numbers in the third column to the base 3 in the first column. In other words, the logarithm of a number is the power to which its base must be raised to produce that number. Thus, 8 is the logarithm of 6,561 to the base 3, and 2 is the logarithm of 9 to the base 3.

In the above table, 3 has been selected as the base. Any number may be so employed, but 10 is the base usually taken. It forms the basis of the common system of logarithms. Common logarithms of numbers are, therefore, indices showing the power to which 10 must be raised to equal those numbers, just as in the table above the logarithms are indices of 3.

As most numbers are not integral powers of 10, the logarithms in the common system are integers only in the rare cases when the numbers are even powers of 10. Thus, $10^2 = 100$; therefore, 2 is the logarithm of 100 to the base 10. Similarly, 3 is the logarithm of 1,000 to the base 10, and 4 is the logarithm of 10,000 to the base 10. But the logarithm of 500 must be something more than 2 and less than 3; that is, it is 2 plus a decimal.

A five-place logarithm table gives this decimal part of the logarithm to 5 points, as....................	.69897
A six-place table gives it as......................	.698970
A thirteen-place table gives it as..................	.6989700043360
A twenty-place table gives it as...................	.69897000433601880479

Usually the last digit is not exactly correct, being approximated or rounded off, just as $18.217 is rounded off to $18.22.

THE CHARACTERISTIC.—The integral part of a logarithm is the "characteristic." The logarithm of 500 to the fifth place is 2.69897, and therefore the characteristic of the logarithm of 500 is 2. Similarly, the characteristic of the logarithm of all numbers from 100 to 999, inclusive, is 2; for the logarithm of 100 is 2, the logarithm of 999 is 2.99957, and the logarithms of all numbers between 100 and 999 lie between 2 and 2.99957. The logarithm of 1,000 is 3, for $10^3 = 1{,}000$. The logarithm of 9,999 is 3.99996. Therefore, the characteristic of the logarithms of all numbers from 1,000 to 9,999 is 3.

The characteristic of a logarithm is determined by the position of the decimal point in its number, being independent of the digits of the number. Thus, the characteristic of the logarithm of 7, which has one unit figure, is zero; of the logarithm of 77.77, which has one figure to the left of the unit place, is 1; of the logarithm of 9.3, with one unit figure, is 0; of the logarithm of 3,742.17, with three figures to the left of the unit place, is 3; of the logarithm of 56,689.778, with five figures to the left of the unit place, is 4; and so on. Hence to find the characteristic of the logarithm of a number, the rule is:

Rule.—To find the **characteristic** of the logarithm of a number, find how many places the first significant figure (figure other than 0) is removed from unit place. It is positive or negative (plus or minus) according as the first significant figure is to the left or right of unit place. Thus:

Characteristic of the logarithm of	1.0	is 0
" " " " "	0.1	" $\bar{1}$ (minus 1)
" " " " "	22.0	" 1
" " " " "	.0222	" $\bar{2}$ (minus 2)
" " " " "	275.0	" 2
" " " " "	.0004	" $\bar{4}$ (minus 4)
" " " " "	1,785.27968	" 3

THE MANTISSA.—The mantissa of the logarithm of a number is the decimal portion. It does not depend upon the location of the decimal point, but upon the significant digits of which the number is composed. Thus, while the characteristics of the logarithms of 999, 99.9, and 9.99, are 2, 1, 0, respectively, the mantissa is the same for all, viz., .99957. Again, the characteristic of the logarithm of 327, 729, and 211, is 2 in each case, but the mantissas are .51455, .86273, and .32428. While the characteristic is positive or negative, depending upon the position of the decimal point, the mantissa is always positive. The mantissa is found by the use of a table of logarithms.

FINDING THE LOGARITHM OF A NUMBER.—The logarithm of a number is determined by first finding the characteristic by the rule given above. The mantissa is found from a table of logarithms, as follows:

Rule 1. When the number is composed of not more than four figures: In the first column of the table of logarithms, find the first two or three or four figures of the number (according to the table used), then follow across on the same line until the column is reached headed by the same figure as the last digit in the number whose logarithm is to be found.[3] The decimal so found is the mantissa. To avoid repetition in the table, the first two (sometimes three or four) figures of the mantissa may be printed at intervals only, in the second column.

Find log 37.53 (the logarithm of 37.53). By the rule, the characteristic is 1. In the first column of the table of logarithms, find 375, and on the same line in the column headed by last digit 3, is found the mantissa, .57438. As the characteristic is 1, the logarithm of 37.53 is 1.57438. Similarly:

log	727.4	is	2.86177
"	3,256.0	"	3.51268
"	7,274.0	"	3.86177

Rule 2. When the number is composed of more than four figures: By glancing at the table of logarithms it will be seen that, within certain limitations, the numbers are proportional to their logarithms, and vice versa. Thus:

log 4,290 .... 3.63246		
		difference is .00010
" 4,291 .... 3.63256		
		" " .00010
" 4,292 .... 3.63266		
		" " .00010
" 4,293 .... 3.63276		

[3] A five-place table is employed in the computations which follow.

While the difference between two successive numbers is constantly 1, the difference between their logarithms is also constant. These differences are the **tabular differences.** Logarithms are, therefore, approximately proportional to their corresponding numbers, and may be assumed to be exactly proportional for practical purposes. Consequently, if any one of the numbers be increased by 0.1, its corresponding logarithm is also increased by 0.1 of the tabular difference between the logarithm of that number and the logarithm of the next higher number. Thus, to take numbers lying between 4,290 and 4,291, the difference between whose logarithms is 10, as shown above:

$$\begin{aligned} \log 4{,}290.1 &= 3.63247 \text{ (or } 3.63246 + .1 \text{ of } 10) \\ \text{“} \quad 4{,}290.2 &= 3.63248 \text{ (or } 3.63246 + .2 \text{ of } 10) \\ \text{“} \quad 4{,}290.9 &= 3.63255 \text{ (or } 3.63246 + .9 \text{ of } 10) \end{aligned}$$

Finding logarithms of numbers lying between two numbers in the table is **interpolation.** To lessen the work of interpolation, in some tables the tabular differences are inserted in a separate column, and at the bottom of the page is sometimes given the proportional part of the last figure. Thus, if the tabular difference is 102, the additions to be made for .1, .2, .3, .4, and so on, are 10, 20, 31, 41, and so on. Had the number whose logarithm was to be found been 42,901 instead of 4,290.1, the mantissa would have been the same, but the characteristic would have been 4 instead of 3.

If the number is composed of six figures, as 429,015, and a six-place table is used, the correction for the last two figures is found by interpolation. The correction for the fifth figure is .1 of 102, or 10, and the correction for the sixth figure is .05 of 102, or 5; hence 15 must be added to 3.632457, the logarithm of 4,290, which gives 5.632472 for the logarithm of 429,015.

FINDING NUMBER CORRESPONDING TO LOGARITHM.—Given the logarithm of a number, the number is found by use of the same table of logarithms. First, from the characteristic of the logarithm the position of the decimal point is determined, the operation being the reverse of that employed in finding the characteristic. If the characteristic is always the same as the number of places the first significant figure is removed from unit place, it follows that in the number corresponding to a given logarithm, the number of places the first significant figure is removed from unit place will depend upon the characteristic, being to the left or right of unit place according as the characteristic is positive or negative.

If the mantissa appears in the table of logarithms, the corresponding number is found immediately. Thus, the number whose logarithm is 2.79106, which is found in the table, is 618.1, position of the decimal being determined as noted above. But if the table shows no mantissa in exact agreement with mantissa of the number sought, the first identical portions of the mantissa are taken; then by the principle of proportional parts, additional figures are added.

Illustration.—Thus, the mantissa of the logarithm of 1.32522 lies between .32510 and .32531 as given in the table. To find corresponding number, proceed as follows:

$$\begin{array}{lrr} \text{Mantissa of log of} & 2{,}115 = & .32531 \\ \text{“ \quad “ \; “ \; “} & 2{,}114 = & .32510 \\ \hline \text{Differences} & 1 & 20 \\ \text{Mantissa of log of required number} & = & .32522 \\ \text{“ \quad “ \; “ \quad “ \quad “} & 2{,}114 = & .32510 \\ \hline & ? & 12 \end{array}$$

By the principle of proportional parts:

$$(?) : 1 :: 12 : 20$$

$$\text{or } (?) = \tfrac{12}{20} = .6$$

Annexing this figure of 6 to 2,114, gives the number whose logarithm is 1.32522 The required number is 21.146, the decimal point being determined by the characteristic, which is 1. Beyond the first two additional figures obtained by interpolation, the accuracy of the process cannot be depended upon, so that the sixth place is the last one to be retained. Instead of using the phrase, "number whose logarithm is 1.32522," the briefer expression, "$\log^{-1}$ 1.32522," is commonly employed. Thus:

$$\log^{-1} 2.75631 = 570.571$$
$$\log^{-1} .00352 = 1.00814$$

FINDING POWERS AND ROOTS OF NUMBERS.—Compound interest problems frequently require the finding of high powers of numbers. Thus the amount of $1 at compound interest in 30 years, interest compounded yearly at 6%, is 1.06^{30}.

$$\text{Log } 1.06 = .02531$$
$$.02531 \times 30 = .7593$$
$$\log^{-1} .7593 = 5.744$$

The answer is $5.74.

Any desired root of a number may be found by dividing the logarithm of that number by the number indicating the root to be found, and then finding in the table the number whose logarithm is the quotient.

Find the 30th root of 5.74354.

$$\log 5.74354 = .75918$$
$$.75918 \div 30 = .02531$$
$$\log^{-1} .02531 = 1.06$$

which is the 30th root of 5.74354.

TABLE OF LOGARITHMS.—Following is a five-place table of common logarithms.

Logarithms of Numbers[4]

No.	0	1	2	3	4	5	6	7	8	9
100	00 000	00 043	00 087	00 130	00 173	00 217	00 260	00 303	00 346	00 389
101	00 432	00 475	00 518	00 561	00 604	00 647	00 689	00 732	00 775	00 817
102	00 860	00 903	00 945	00 988	01 030	01 072	01 115	01 157	01 199	01 242
103	01 284	01 326	01 368	01 410	01 452	01 494	01 536	01 578	01 620	01 662
104	01 703	01 745	01 787	01 828	01 870	01 912	01 953	01 995	02 036	02 078
105	02 119	02 160	02 202	02 243	02 284	02 325	02 366	02 407	02 449	02 490
106	02 531	02 572	02 612	02 653	02 694	02 735	02 776	02 816	02 857	02 898
107	02 938	02 979	03 019	03 060	03 100	03 141	03 181	03 222	03 262	03 302
108	03 342	03 383	03 423	03 463	03 503	03 543	03 583	03 623	03 663	03 703
109	03 743	03 782	03 822	03 862	03 902	03 941	03 981	04 021	04 060	04 100
110	04 139	04 179	04 218	04 258	04 297	04 336	04 376	04 415	04 454	04 493
111	04 532	04 571	04 610	04 650	04 689	04 727	04 766	04 805	04 844	04 883
112	04 922	04 961	04 999	05 038	05 077	05 115	05 154	05 192	05 231	05 269
113	05 308	05 346	05 385	05 423	05 461	05 500	05 538	05 576	05 614	05 652
114	05 690	05 729	05 767	05 805	05 843	05 881	05 918	05 956	05 994	06 032
115	06 070	06 108	06 145	06 183	06 221	06 258	06 296	06 333	06 371	06 408
116	06 446	06 483	06 521	06 558	06 595	06 633	06 670	06 707	06 744	06 781
117	06 819	06 856	06 893	06 930	06 967	07 004	07 041	07 078	07 115	07 151
118	07 188	07 225	07 262	07 298	07 335	07 372	07 408	07 445	07 482	07 518
119	07 555	07 591	07 628	07 664	07 700	07 737	07 773	07 809	07 846	07 882
120	07 918	07 954	07 990	08 027	08 063	08 099	08 135	08 171	08 207	08 243
121	08 279	08 314	08 350	08 386	08 422	08 458	08 493	08 529	08 565	08 600
122	08 636	08 672	08 707	08 743	08 778	08 814	08 849	08 884	08 920	08 955
123	08 991	09 026	09 061	09 096	09 132	09 167	09 202	09 237	09 272	09 307
124	09 342	09 377	09 412	09 447	09 482	09 517	09 552	09 587	09 621	09 656
125	09 691	09 726	09 760	09 795	09 830	09 864	09 899	09 934	09 968	10 003
126	10 037	10 072	10 106	10 140	10 175	10 209	10 243	10 278	10 312	10 346
127	10 380	10 415	10 449	10 483	10 517	10 551	10 585	10 619	10 653	10 687
128	10 721	10 755	10 789	10 823	10 857	10 890	10 924	10 958	10 992	11 025
129	11 059	11 093	11 126	11 160	11 193	11 227	11 261	11 294	11 327	11 361
130	11 394	11 428	11 461	11 494	11 528	11 561	11 594	11 628	11 661	11 694
131	11 727	11 760	11 793	11 826	11 860	11 893	11 926	11 959	11 992	12 024
132	12 057	12 090	12 123	12 156	12 189	12 222	12 254	12 287	12 320	12 352
133	12 385	12 418	12 450	12 483	12 516	12 548	12 581	12 613	12 646	12 678
134	12 710	12 743	12 775	12 808	12 840	12 872	12 905	12 937	12 969	13 001
135	13 033	13 066	13 098	13 130	13 162	13 194	13 226	13 258	13 290	13 322
136	13 354	13 386	13 418	13 450	13 481	13 513	13 545	13 577	13 609	13 640
137	13 672	13 704	13 735	13 767	13 799	13 830	13 862	13 893	13 925	13 956
138	13 988	14 019	14 051	14 082	14 114	14 145	14 176	14 208	14 239	14 270
139	14 301	14 333	14 364	14 395	14 426	14 457	14 489	14 520	14 551	14 582
140	14 613	14 644	14 675	14 706	14 737	14 768	14 799	14 829	14 860	14 891
141	14 922	14 953	14 983	15 014	15 045	15 076	15 106	15 137	15 168	15 198
142	15 229	15 259	15 290	15 320	15 351	15 381	15 412	15 442	15 473	15 503
143	15 534	15 564	15 594	15 625	15 655	15 685	15 715	15 746	15 776	15 806
144	15 836	15 866	15 897	15 927	15 957	15 987	16 017	16 047	16 077	16 107
145	16 137	16 167	16 197	16 227	16 256	16 286	16 316	16 346	16 376	16 406
146	16 435	16 465	16 495	16 524	16 554	16 584	16 613	16 643	16 673	16 702
147	16 732	16 761	16 791	16 820	16 850	16 879	16 909	16 938	16 967	16 997
148	17 026	17 056	17 085	17 114	17 143	17 173	17 202	17 231	17 260	17 289
149	17 319	17 348	17 377	17 406	17 435	17 464	17 493	17 522	17 551	17 580
150	17 609	17 638	17 667	17 696	17 725	17 754	17 782	17 811	17 840	17 869
151	17 898	17 926	17 955	17 984	18 013	18 041	18 070	18 099	18 127	18 156
152	18 184	18 213	18 241	18 270	18 298	18 327	18 355	18 384	18 412	18 441
153	18 469	18 498	18 526	18 554	18 583	18 611	18 639	18 667	18 696	18 724
154	18 752	18 780	18 808	18 837	18 865	18 893	18 921	18 949	18 977	19 005

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Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
155	19 033	19 061	19 089	19 117	19 145	19 173	19 201	19 229	19 257	19 285
156	19 312	19 340	19 368	19 396	19 424	19 451	19 479	19 507	19 535	19 562
157	19 590	19 618	19 645	19 673	19 700	19 728	19 756	19 783	19 811	19 838
158	19 866	19 893	19 921	19 948	19 976	20 003	20 030	20 085	20 085	20 112
159	20 140	20 167	20 194	20 222	20 249	20 276	20 303	20 330	20 358	20 385
160	20 412	20 439	20 466	20 493	20 520	20 548	20 575	20 602	20 629	20 656
161	20 683	20 710	20 737	20 763	20 790	20 817	20 844	20 871	20 898	20 925
162	20 952	20 978	21 005	21 032	21 059	21 085	21 112	21 139	21 165	21 192
163	21 219	21 245	21 272	21 299	21 325	21 352	21 378	21 405	21 431	21 458
164	21 484	21 511	21 537	21 564	21 590	21 617	21 643	21 669	21 696	21 722
165	21 748	21 775	21 801	21 827	21 854	21 880	21 906	21 932	21 958	21 985
166	22 011	22 037	22 063	22 089	22 115	22 141	22 167	22 194	22 220	22 246
167	22 272	22 298	22 324	22 350	22 376	22 401	22 427	22 453	22 479	22 505
168	22 531	22 557	22 583	22 608	22 634	22 660	22 686	22 712	22 737	22 763
169	22 789	22 814	22 840	22 866	22 891	22 917	22 943	22 968	22 994	23 019
170	23 045	23 070	23 096	23 121	23 147	23 172	23 198	23 223	23 249	23 274
171	23 300	23 325	23 350	23 376	23 401	23 426	23 452	23 477	23 502	23 528
172	23 553	23 578	23 603	23 629	23 654	23 679	23 704	23 729	23 754	23 779
173	23 805	23 830	23 855	23 880	23 905	23 930	23 955	23 980	24 005	24 030
174	24 055	24 080	24 105	24 130	24 155	24 180	24 204	24 229	24 254	24 279
175	24 304	24 329	24 353	24 378	24 403	24 428	24 452	24 477	24 502	24 527
176	24 551	24 576	24 601	24 625	24 650	24 674	24 699	24 724	24 748	24 773
177	24 797	24 822	24 846	24 871	24 895	24 920	24 944	24 969	24 993	25 018
178	25 042	25 066	25 091	25 115	25 139	25 164	25 188	25 212	25 237	25 261
179	25 285	25 310	25 334	25 358	25 382	25 406	25 431	25 455	25 479	25 503
180	25 527	25 551	25 575	25 600	25 624	25 648	25 672	25 696	25 720	25 744
181	25 768	25 792	25 816	25 840	25 864	25 888	25 912	25 935	25 959	25 983
182	26 007	26 031	26 055	26 079	26 102	26 126	26 150	26 174	26 198	26 221
183	26 245	26 269	26 293	26 316	26 340	26 364	26 387	26 411	26 435	26 458
184	26 482	26 505	26 529	26 553	26 576	26 600	26 623	26 647	26 670	26 694
185	26 717	26 741	26 764	26 788	26 811	26 834	26 858	26 881	26 905	26 928
186	26 951	26 975	26 998	27 021	27 045	27 068	27 091	27 114	27 138	27 161
187	27 184	27 207	27 231	27 254	27 277	27 300	27 323	27 346	27 370	27 393
188	27 416	27 439	27 462	27 485	27 508	27 531	27 554	27 577	27 600	27 623
189	27 646	27 669	27 692	27 715	27 738	27 761	27 784	27 807	27 830	27 852
190	27 875	27 898	27 921	27 944	27 967	27 989	28 012	28 035	28 058	28 081
191	28 103	28 126	28 149	28 171	28 194	28 217	28 240	28 262	28 285	28 307
192	28 330	28 353	28 375	28 398	28 421	28 443	28 466	28 488	28 511	28 533
193	28 556	28 578	28 601	28 623	28 646	28 668	28 691	28 713	28 735	28 758
194	28 780	28 803	28 825	28 847	28 870	28 892	28 914	28 937	28 959	28 981
195	29 003	29 026	29 048	29 070	29 092	29 115	29 137	29 159	29 181	29 203
196	29 226	29 248	29 270	29 292	29 314	29 336	29 358	29 380	29 403	29 425
197	29 447	29 469	29 491	29 513	29 535	29 557	29 579	29 601	29 623	29 645
198	29 667	29 688	29 710	29 732	29 754	29 776	29 798	29 820	29 842	29 863
199	29 885	29 907	29 929	29 951	29 973	29 994	30 016	30 038	30 060	30 081
200	30 103	30 125	30 146	30 168	30 190	30 211	30 233	30 255	30 276	30 298
201	30 320	30 341	30 363	30 384	30 406	30 428	30 449	30 471	30 492	30 514
202	30 535	30 557	30 578	30 600	30 621	30 643	30 664	30 685	30 707	30 728
203	30 750	30 771	30 792	30 814	30 835	30 856	30 878	30 899	30 920	30 942
204	30 963	30 984	31 006	31 027	31 048	31 069	31 091	31 112	31 133	31 154
205	31 175	31 197	31 218	31 239	31 260	31 281	31 302	31 323	31 345	31 366
206	31 387	31 408	31 429	31 450	31 471	31 492	31 513	31 534	31 555	31 576
207	31 597	31 618	31 639	31 660	31 681	31 702	31 723	31 744	31 765	31 785
208	31 806	31 827	31 848	31 869	31 890	31 911	31 931	31 952	31 973	31 994
209	32 015	32 035	32 056	32 077	32 098	32 118	32 139	32 160	32 181	32 201

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
210	32 222	32 243	32 263	32 284	32 305	32 325	32 346	32 366	32 387	32 408
211	32 428	32 449	32 469	32 490	32 510	32 531	32 552	32 572	32 593	32 613
212	32 634	32 654	32 675	32 695	32 715	32 736	32 756	32 777	32 797	32 818
213	32 838	32 858	32 879	32 899	32 919	32 940	32 960	32 980	33 001	33 021
214	33 041	33 062	33 082	33 102	33 122	33 143	33 163	33 183	33 203	33 224
215	33 244	33 264	33 284	33 304	33 325	33 345	33 365	33 385	33 405	33 425
216	33 445	33 465	33 486	33 506	33 526	33 546	33 566	33 586	33 606	33 626
217	33 646	33 666	33 686	33 706	33 746	33 746	33 766	33 786	33 806	33 826
218	33 846	33 866	33 885	33 905	33 925	33 945	33 965	33 985	34 005	34 025
219	34 044	34 064	34 084	34 104	34 124	34 143	34 163	34 183	34 203	34 223
220	34 242	34 262	34 282	34 301	34 321	34 341	34 361	34 380	34 400	34 420
221	34 439	34 459	34 479	34 498	34 518	34 537	34 557	34 577	34 596	34 616
222	34 635	34 655	34 674	34 694	34 713	34 733	34 753	34 772	34 792	34 811
223	34 830	34 850	34 869	34 889	34 908	34 928	34 947	34 967	34 986	35 005
224	35 025	35 044	35 064	35 083	35 102	35 122	35 141	35 160	35 180	35 199
225	35 218	35 238	35 257	35 276	35 295	35 315	35 334	35 353	35 372	35 392
226	35 411	35 430	35 449	35 468	35 488	35 507	35 526	35 545	35 564	35 583
227	35 603	35 622	35 641	35 660	35 679	35 698	35 717	35 736	35 755	35 774
228	35 793	35 813	35 832	35 851	35 870	35 889	35 908	35 927	35 946	35 965
229	35 984	36 003	36 021	36 040	36 059	36 078	36 097	36 116	36 135	36 154
230	36 173	36 192	36 211	36 229	36 248	36 267	36 286	36 305	36 324	36 342
231	36 361	36 380	36 399	36 418	36 436	36 455	36 474	36 493	36 511	36 530
232	36 549	36 568	36 586	36 605	36 624	36 642	36 661	36 680	36 698	36 717
233	36 736	36 754	36 773	36 791	36 810	36 829	36 847	36 866	36 884	36 903
234	36 922	36 940	36 959	36 977	36 996	37 014	37 033	37 051	37 070	37 088
235	37 107	37 125	37 144	37 162	37 181	37 199	37 218	37 236	37 254	37 273
236	37 291	37 310	37 328	37 346	37 365	37 383	37 401	37 420	37 438	37 457
237	37 475	37 493	37 511	37 530	37 548	37 566	37 585	37 603	37 621	37 639
238	37 658	37 676	37 694	37 712	37 731	37 749	37 767	37 785	37 803	37 822
239	37 840	37 858	37 876	37 894	37 912	37 931	37 949	37 967	37 985	38 003
240	38 021	38 039	38 057	38 075	38 093	38 112	38 130	38 148	38 166	38 184
241	38 202	38 220	38 238	38 256	38 274	38 292	38 310	38 328	38 346	38 364
242	38 382	38 399	38 417	38 435	38 453	38 471	38 489	38 507	38 525	38 543
243	38 561	38 578	38 596	38 614	38 632	38 650	38 668	38 686	38 703	38 721
244	38 739	38 757	38 775	38 792	38 810	38 828	38 846	38 863	38 881	38 899
245	38 917	38 934	38 952	38 970	38 987	39 005	39 023	39 041	39 058	39 076
246	39 094	39 111	39 129	39 146	39 164	39 182	39 199	39 217	39 235	39 252
247	39 270	39 287	39 305	39 322	39 340	39 358	39 375	39 393	39 410	39 428
248	39 445	39 463	39 480	39 498	39 515	39 533	39 550	39 568	39 585	39 602
249	39 620	39 637	39 655	39 672	39 690	39 707	39 724	39 742	39 759	39 777
250	39 794	39 811	39 829	39 846	39 863	39 881	39 898	39 915	39 933	39 950
251	39 967	39 985	40 002	40 019	40 037	40 054	40 071	40 088	40 106	40 123
252	40 140	40 157	40 175	40 192	40 209	40 226	40 243	40 261	40 278	40 295
253	40 312	40 329	40 346	40 364	40 381	40 398	40 415	40 432	40 449	40 466
254	40 483	40 500	40 518	40 535	40 552	40 569	40 586	40 603	40 620	40 637
255	40 654	40 671	40 688	40 705	40 722	40 739	40 756	40 773	40 790	40 807
256	40 824	40 841	40 858	40 875	40 892	40 909	40 926	40 943	40 960	40 976
257	40 993	41 010	41 027	41 044	41 061	41 078	41 095	41 111	41 128	41 145
258	41 162	41 179	41 196	41 212	41 229	41 246	41 263	41 280	41 296	41 313
259	41 330	41 347	41 363	41 380	41 397	41 414	41 430	41 447	41 464	41 481
260	41 497	41 514	41 531	41 547	41 564	41 581	41 597	41 614	41 631	41 647
261	41 664	41 681	41 697	41 714	41 731	41 747	41 764	41 780	41 797	41 814
262	41 830	41 847	41 863	41 880	41 896	41 913	41 929	41 946	41 963	41 979
263	41 996	42 012	42 029	42 045	42 062	42 078	42 095	42 111	42 127	42 144
264	42 160	42 177	42 193	42 210	42 226	42 243	42 259	42 275	42 292	42 308

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
265	42 325	42 341	42 357	42 374	42 390	42 406	42 423	42 439	42 455	42 472
266	42 488	42 504	42 521	42 537	42 553	42 570	42 586	42 602	42 619	42 635
267	42 651	42 667	42 684	42 700	42 716	42 732	42 749	42 765	42 781	42 797
268	42 813	42 830	42 846	42 862	42 878	42 894	42 911	42 927	42 943	42 959
269	42 975	42 991	43 008	43 024	43 040	43 056	43 072	43 088	43 104	43 120
270	43 136	43 152	43 169	43 185	43 201	43 217	43 233	43 249	43 265	43 281
271	43 297	43 313	43 329	43 345	43 361	43 377	43 393	43 409	43 425	43 441
272	43 457	43 473	43 489	43 505	43 521	43 537	43 553	43 569	43 584	43 600
273	43 616	43 632	43 648	43 664	43 680	43 696	43 712	43 727	43 743	43 759
274	43 775	43 791	43 807	43 823	43 838	43 854	43 870	43 886	43 902	43 917
275	43 933	43 949	43 965	43 981	43 996	44 012	44 028	44 044	44 059	44 075
276	44 091	44 107	44 122	44 138	44 154	44 170	44 185	44 201	44 217	44 232
277	44 248	44 264	44 279	44 295	44 311	44 326	44 342	44 358	44 373	44 389
278	44 404	44 420	44 436	44 451	44 467	44 483	44 498	44 514	44 529	44 545
279	44 560	44 576	44 592	44 607	44 623	44 638	44 654	44 669	44 685	44 700
280	44 716	44 731	44 747	44 762	44 778	44 793	44 809	44 824	44 840	44 855
281	44 871	44 886	44 902	44 917	44 932	44 948	44 963	44 979	44 994	45 010
282	45 025	45 040	45 056	45 071	45 086	45 102	45 117	45 133	45 148	45 163
283	45 179	45 194	45 209	45 225	45 240	45 255	45 271	45 286	45 301	45 317
284	45 332	45 347	45 362	45 378	45 393	45 408	45 423	45 439	45 454	45 469
285	45 484	45 500	45 515	45 530	45 545	45 561	45 576	45 591	45 606	45 621
286	45 637	45 652	45 667	45 682	45 697	45 712	45 728	45 743	45 758	45 773
287	45 788	45 803	45 818	45 834	45 849	45 864	45 879	45 894	45 909	45 924
288	45 939	45 954	45 969	45 984	46 000	46 015	46 030	46 045	46 060	46 075
289	46 090	46 105	46 120	46 135	46 150	46 165	46 180	46 195	46 210	46 225
290	46 240	46 255	46 270	46 285	46 300	46 315	46 330	46 345	46 359	46 374
291	46 389	46 404	46 419	46 434	46 449	46 464	46 479	46 494	46 509	46 523
292	46 538	46 553	46 568	46 583	46 598	46 613	46 627	46 642	46 657	46 672
293	46 687	46 702	46 716	46 731	46 746	46 761	46 776	46 790	46 805	46 820
294	46 835	46 850	46 864	46 879	46 894	46 909	46 923	46 938	46 953	46 967
295	46 982	46 997	47 012	47 026	47 041	47 056	47 070	47 085	47 100	47 114
296	47 129	47 144	47 159	47 173	47 188	47 202	47 217	47 232	47 246	47 261
297	47 276	47 290	47 305	47 319	47 334	47 349	47 363	47 378	47 392	47 407
298	47 422	47 436	47 451	47 465	47 480	47 494	47 509	47 524	47 538	47 553
299	47 567	47 582	47 596	47 611	47 625	47 640	47 654	47 669	47 683	47 698
300	47 712	47 727	47 741	47 756	47 770	47 784	47 799	47 813	47 828	47 842
301	47 857	47 871	47 885	47 900	47 914	47 929	47 943	47 958	47 972	47 986
302	48 001	48 015	48 029	48 044	47 058	48 073	48 087	48 101	48 116	48 130
303	48 144	48 159	48 173	48 187	48 202	48 216	48 230	48 244	48 259	48 273
304	48 287	48 302	48 316	48 330	48 344	48 359	48 373	48 387	48 401	48 416
305	48 430	48 444	48 458	48 473	48 487	48 501	48 515	48 530	48 544	48 558
306	48 572	48 586	48 601	48 615	48 629	48 643	48 657	48 671	48 686	48 700
307	48 714	48 728	48 742	48 756	48 770	48 785	48 799	48 813	48 827	48 841
308	48 855	48 869	48 883	48 897	48 911	48 926	48 940	48 954	48 968	48 982
309	48 996	49 010	49 024	49 038	49 052	49 066	49 080	49 094	49 108	49 122
310	49 136	49 150	49 164	49 178	49 192	49 206	49 220	49 234	49 248	49 262
311	49 276	49 290	49 304	49 318	49 332	49 346	49 360	49 374	49 388	49 402
312	49 415	49 429	49 443	49 457	49 471	49 485	49 499	49 513	49 527	49 541
313	49 554	49 568	49 582	49 596	49 610	49 624	49 638	49 651	49 665	49 679
314	49 693	49 707	49 721	49 734	49 748	49 762	49 776	49 790	49 803	49 817
315	49 831	49 845	49 859	49 872	49 886	49 900	49 914	49 927	49 941	49 955
316	49 969	49 982	49 996	50 010	50 024	50 037	50 051	50 065	50 079	50 092
317	50 106	50 120	50 133	50 147	50 161	50 174	50 188	50 202	50 215	50 229
318	50 243	50 256	50 270	50 284	50 297	50 311	50 325	50 338	50 352	50 365
319	50 379	50 393	50 406	50 420	50 433	50 447	50 461	50 474	50 488	50 501

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
320	50 515	50 529	50 542	50 556	50 569	50 583	50 596	50 610	50 623	50 637
321	50 651	50 664	50 678	50 691	50 705	50 718	50 732	50 745	50 759	50 772
322	50 786	50 799	50 813	50 826	50 840	50 853	50 866	50 880	50 893	50 907
323	50 920	50 934	50 947	50 961	50 974	50 987	51 001	51 014	51 028	51 041
324	51 055	51 068	51 081	51 095	51 108	51 121	51 135	51 148	51 162	51 175
325	51 188	51 202	51 215	51 228	51 242	51 255	51 268	51 282	51 295	51 308
326	51 322	51 335	51 348	51 362	51 375	51 388	51 402	51 415	51 428	51 441
327	51 455	51 468	51 481	51 495	51 508	51 521	51 534	51 548	51 561	51 574
328	51 587	51 601	51 614	51 627	51 640	51 654	51 667	51 680	51 693	51 706
329	51 720	51 733	51 746	51 759	51 772	51 786	51 799	51 812	51 825	51 838
330	51 851	51 865	51 878	51 891	51 904	51 917	51 930	51 943	51 957	51 970
331	51 983	51 996	52 009	52 022	52 035	52 048	52 061	52 075	52 088	52 101
332	52 114	52 127	52 140	52 153	52 166	52 179	52 192	52 205	52 218	52 231
333	52 244	52 257	52 270	52 284	52 297	52 310	52 323	52 336	52 349	52 362
334	52 375	52 388	52 401	52 414	52 427	52 440	52 453	52 466	52 479	52 492
335	52 504	52 517	52 530	52 543	52 556	52 569	52 582	52 595	52 608	52 621
336	52 634	52 647	52 660	52 673	52 686	52 699	52 711	52 724	52 737	52 750
337	52 763	52 776	52 789	52 802	52 815	52 827	52 840	52 853	52 866	52 879
338	52 892	52 905	52 917	52 930	52 943	52 956	52 969	52 982	52 994	53 007
339	53 020	53 033	53 046	53 058	53 071	53 084	53 097	53 110	53 122	53 135
340	53 148	53 161	53 173	53 186	53 199	53 212	53 224	53 237	53 250	53 263
341	53 275	53 288	53 301	53 314	53 326	53 339	53 352	53 364	53 377	53 390
342	53 403	53 415	53 428	53 441	53 453	53 466	53 479	53 491	53 504	53 517
343	53 529	53 542	53 555	53 567	53 580	53 593	53 605	53 618	53 631	53 643
344	53 656	53 668	53 681	53 694	53 706	53 719	53 732	53 744	53 757	53 769
345	53 782	53 794	53 807	53 820	53 832	53 845	53 857	53 870	53 882	53 895
346	53 908	53 920	53 933	53 945	53 958	53 970	53 983	53 995	54 008	54 020
347	54 033	54 045	54 058	54 070	54 083	54 095	54 108	54 120	54 133	54 145
348	54 158	54 170	54 183	54 195	54 208	54 220	54 233	54 245	54 258	54 270
349	54 283	54 295	54 307	54 320	54 332	54 345	54 357	54 370	54 382	54 394
350	54 407	54 419	54 432	54 444	54 456	54 469	54 481	54 494	54 506	54 518
351	54 531	54 543	54 555	54 568	54 580	54 593	54 605	54 617	54 630	54 642
352	54 654	54 667	54 679	54 691	54 704	54 716	54 728	54 741	54 753	54 765
353	54 777	54 790	54 802	54 814	54 827	54 839	54 851	54 864	54 876	54 888
354	54 900	54 913	54 925	54 937	54 949	54 962	54 974	54 986	54 998	55 011
355	55 023	55 035	55 047	55 060	55 072	55 084	55 096	55 108	55 121	55 133
356	55 145	55 157	55 169	55 182	55 194	55 206	55 218	55 230	55 242	55 255
357	55 267	55 279	55 291	55 303	55 315	55 318	55 340	55 352	55 364	55 376
358	55 388	55 400	55 413	55 425	55 437	55 449	55 461	55 473	55 485	55 497
359	55 509	55 522	55 534	55 546	55 558	55 570	55 582	55 594	55 606	55 618
360	55 630	55 642	55 654	55 666	55 678	55 691	55 703	55 715	55 727	55 739
361	55 751	55 763	55 775	55 787	55 799	55 811	55 823	55 835	55 847	55 859
362	55 871	55 883	55 895	55 907	55 919	55 931	55 943	55 955	55 967	55 979
363	55 991	56 003	56 015	56 027	56 038	56 050	56 062	56 074	56 086	56 098
364	56 110	56 122	56 134	56 146	56 158	56 170	56 182	56 194	56 205	56 217
365	56 229	56 241	56 253	56 265	56 277	56 289	56 301	56 312	56 324	56 336
366	56 348	56 360	56 372	56 384	56 396	56 407	56 419	56 431	56 443	56 445
367	56 467	56 478	56 490	56 502	56 514	56 526	56 538	56 549	56 561	56 573
368	56 585	56 597	56 608	56 620	56 632	56 644	56 656	56 667	56 679	56 691
369	56 703	56 714	56 726	56 738	56 750	56 761	56 773	56 785	56 797	56 808
370	56 820	56 832	56 844	56 855	56 867	56 879	56 891	56 902	56 914	56 926
371	56 937	56 949	56 961	56 972	56 984	56 996	57 008	57 019	57 031	57 043
372	57 054	57 066	57 078	57 089	57 101	57 113	57 124	57 136	57 148	57 159
373	57 171	57 183	57 194	57 206	57 217	57 229	57 241	57 252	57 264	57 276
374	57 287	57 299	57 310	57 322	57 334	57 345	57 357	57 368	57 380	57 392

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
375	57 403	57 415	57 426	57 438	57 449	57 461	57 473	57 484	57 496	57 507
376	57 519	57 530	57 542	57 553	57 565	57 576	57 588	57 600	57 611	57 623
377	57 634	57 646	57 657	57 669	57 680	57 692	57 703	57 715	57 726	57 738
378	57 749	57 761	57 772	57 784	57 795	57 807	57 818	57 830	57 841	57 852
379	57 864	57 875	57 887	57 898	57 910	57 921	57 933	57 944	57 955	57 967
380	57 978	57 990	58 001	58 013	58 024	58 035	58 047	58 058	58 070	58 081
381	58 092	58 104	58 115	58 127	58 138	58 149	58 161	58 172	58 184	58 195
382	58 206	58 218	58 229	58 240	58 252	58 263	58 274	58 286	58 297	58 309
383	58 320	58 331	58 343	58 354	58 365	58 377	58 388	58 399	58 410	58 422
384	58 433	58 444	58 456	58 467	58 478	58 490	58 501	58 512	58 524	58 535
385	58 546	58 557	58 569	58 580	58 591	58 602	58 614	58 625	58 636	58 647
386	58 659	58 670	58 681	58 692	58 704	58 715	58 726	58 737	58 749	58 760
387	58 771	58 782	58 794	58 805	58 816	58 827	58 838	58 850	58 861	58 872
388	58 883	58 894	58 906	58 917	58 928	58 939	58 950	58 961	58 973	58 984
389	58 995	59 006	59 017	59 028	59 040	59 051	59 062	59 073	59 084	59 095
390	59 106	59 118	59 129	59 140	59 151	59 162	59 173	59 184	59 195	59 207
391	59 218	59 229	59 240	59 251	59 262	59 273	59 284	59 295	59 306	59 318
392	59 329	59 340	59 351	59 362	59 373	59 384	59 395	59 406	59 417	59 428
393	59 439	59 450	59 461	59 472	59 483	59 494	59 506	59 517	59 528	59 539
394	59 550	59 561	59 572	59 583	59 594	59 605	59 616	59 627	59 638	59 649
395	59 660	59 671	59 682	59 693	59 704	59 715	59 726	59 737	59 748	59 759
396	59 770	59 780	59 791	59 802	59 813	59 824	59 835	59 846	59 857	59 868
397	59 879	59 890	59 901	59 912	59 923	59 934	59 945	59 956	59 966	59 977
398	59 988	59 999	60 010	60 021	60 032	60 043	60 054	60 065	60 076	60 086
399	60 097	60 108	60 119	60 130	60 141	60 152	60 163	60 173	60 184	60 195
400	60 206	60 217	60 228	60 239	60 249	60 260	60 271	60 282	60 293	60 304
401	60 314	60 325	60 336	60 347	60 358	60 369	60 379	60 390	60 401	60 412
402	60 423	60 433	60 444	60 455	60 466	60 477	60 487	60 498	60 509	60 520
403	60 531	60 541	60 552	60 563	60 574	60 584	60 595	60 606	60 617	60 627
404	60 638	60 649	60 660	60 670	60 681	60 692	60 703	60 713	60 724	60 735
405	60 746	60 756	60 767	60 778	60 788	60 799	60 810	60 821	60 831	60 842
406	60 853	60 863	60 874	60 885	60 895	60 906	60 917	60 927	60 938	60 949
407	60 959	60 970	60 981	60 991	61 002	61 013	61 023	61 034	61 045	61 055
408	61 066	61 077	61 087	61 098	61 109	61 119	61 130	61 140	61 151	61 162
409	61 172	61 183	61 194	61 204	61 215	61 225	61 236	61 247	61 257	61 268
410	61 278	61 289	61 300	61 310	61 321	61 331	61 342	61 352	61 363	61 374
411	61 384	61 395	61 405	61 416	61 426	61 437	61 448	61 458	61 469	61 479
412	61 490	61 500	61 511	61 521	61 532	61 542	61 553	61 563	61 574	61 584
413	61 595	61 606	61 616	61 627	61 637	61 648	61 658	61 669	61 679	61 690
414	61 700	61 711	61 721	61 731	61 742	61 752	61 763	61 773	61 784	61 794
415	61 805	61 815	61 826	61 836	61 847	61 857	61 868	61 878	61 888	61 890
416	61 909	61 920	71 930	61 941	61 951	61 962	61 972	61 982	61 993	61 003
417	62 014	62 024	62 034	62 045	62 055	62 066	62 076	62 086	62 097	62 107
418	62 118	62 128	62 138	62 149	62 159	62 170	62 180	62 190	62 201	62 211
419	62 221	62 232	62 242	62 252	62 263	62 273	62 284	62 294	62 304	62 315
420	62 325	62 335	62 346	62 356	62 366	62 377	62 387	62 397	62 408	62 418
421	62 428	62 439	62 449	62 459	62 469	62 480	62 490	62 500	62 511	62 521
422	62 531	62 542	62 552	62 562	62 572	62 583	62 593	62 603	62 613	62 624
423	62 634	62 644	62 655	62 665	62 675	62 685	62 696	62 706	62 716	62 726
424	62 737	62 747	62 757	62 767	62 778	62 788	62 798	62 808	62 818	62 829
425	62 839	62 849	62 859	62 870	62 880	62 890	62 900	62 910	62 921	62 931
426	62 941	62 951	62 961	62 972	62 982	62 992	63 002	63 012	63 022	63 033
427	63 043	63 053	63 063	63 073	63 083	63 094	63 104	63 114	63 124	63 134
428	63 144	63 155	63 165	63 175	63 185	63 195	63 205	63 215	63 225	63 236
429	63 246	63 256	63 266	63 276	63 286	63 296	63 306	63 317	63 327	63 337

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
430	63 347	63 357	63 367	63 377	63 387	63 397	63 407	63 417	63 428	63 438
431	63 448	63 458	63 468	63 478	63 488	63 498	63 508	63 518	63 528	63 538
432	63 548	63 558	63 568	63 579	63 589	63 599	63 609	63 619	63 629	63 639
433	63 649	63 659	63 669	63 679	63 689	63 699	63 709	63 719	63 729	63 739
434	63 749	63 759	63 769	63 779	63 789	63 799	63 809	63 819	63 829	63 839
435	63 849	63 859	63 869	63 879	63 889	63 899	63 909	63 919	63 929	63 939
436	63 949	63 959	63 969	63 979	63 988	63 998	64 008	64 018	64 028	64 038
437	64 048	64 058	64 068	64 078	64 088	64 098	64 108	64 118	64 128	64 137
438	64 147	64 157	64 167	64 177	64 187	64 197	64 207	64 217	64 227	64 237
439	64 246	64 256	64 266	64 276	64 286	64 296	64 306	64 316	64 326	64 335
440	64 345	64 355	64 365	64 375	64 385	64 395	64 404	64 144	64 424	64 434
441	64 444	64 454	64 464	64 473	64 483	64 493	64 503	64 513	64 523	64 532
442	64 542	64 552	64 562	64 572	64 582	64 591	64 601	64 611	64 621	64 631
443	64 640	64 650	64 660	64 670	64 680	64 689	64 699	64 709	64 719	64 729
444	64 738	64 748	64 758	64 768	64 777	64 787	64 797	64 807	64 816	64 826
445	64 836	64 846	64 856	64 865	64 875	64 885	64 895	64 904	64 914	64 924
446	64 933	64 943	64 953	64 963	64 972	64 982	64 992	65 002	65 011	65 021
447	65 031	65 040	65 050	65 060	65 070	65 079	65 089	65 099	65 108	65 118
448	65 128	65 137	65 147	65 157	65 167	65 176	65 186	65 196	65 205	65 215
449	65 225	65 234	65 244	65 254	65 263	65 273	65 283	65 292	65 302	65 312
450	65 321	65 331	65 341	65 350	65 360	65 369	65 379	65 389	65 398	65 408
451	65 418	65 427	65 437	65 447	65 456	65 466	65 475	65 485	65 495	65 504
452	65 514	65 523	65 533	65 543	65 552	65 562	65 571	65 581	65 591	65 600
453	65 610	65 619	65 629	65 639	65 648	65 658	65 667	65 677	65 686	65 696
454	65 706	65 715	65 725	65 734	65 744	65 753	65 763	65 772	65 782	65 792
455	65 801	65 811	65 820	65 830	65 839	65 849	65 858	65 868	65 877	65 887
456	65 896	65 906	65 916	65 925	65 935	65 944	65 954	65 963	65 973	65 982
457	65 992	66 001	66 011	66 020	66 030	66 039	66 049	66 058	66 068	66 077
458	66 087	66 096	66 106	66 115	66 124	66 134	66 143	66 153	66 162	66 172
459	66 181	66 191	66 200	66 210	66 219	66 229	66 238	66 247	66 257	66 266
460	66 276	66 285	66 295	66 304	66 314	66 323	66 332	66 342	66 351	66 361
461	66 370	66 380	66 389	66 398	66 408	66 417	66 427	66 436	66 445	66 455
462	66 464	66 474	66 483	66 492	66 502	66 511	66 521	66 530	66 539	66 549
463	66 558	66 567	66 577	66 586	66 596	66 605	66 614	66 624	66 633	66 642
464	66 652	66 661	66 671	66 680	66 689	66 699	66 708	66 717	66 727	66 736
465	66 745	66 755	66 764	66 773	66 783	66 792	66 801	66 811	66 820	66 829
466	66 839	66 848	66 857	66 867	66 876	66 885	66 894	66 904	66 913	66 922
467	66 932	66 941	66 950	66 960	66 969	66 978	66 987	66 997	67 006	67 015
468	67 025	67 034	67 043	67 052	67 062	67 071	67 080	67 089	67 099	67 108
469	67 117	67 127	67 136	67 145	67 154	67 164	67 173	67 182	67 191	67 201
470	67 210	67 219	67 228	67 237	67 247	67 256	67 265	67 274	67 284	67 293
471	67 302	67 311	67 321	67 330	67 339	67 348	67 357	67 367	67 376	67 385
472	67 394	67 403	67 413	67 422	67 431	67 440	67 449	67 459	67 468	67 477
473	67 486	67 495	67 504	67 514	67 523	67 532	67 541	67 550	67 560	67 569
474	67 578	67 587	67 596	67 605	67 614	67 624	67 633	67 642	67 651	67 660
475	67 669	67 679	67 688	67 697	67 706	67 715	67 724	67 733	67 742	67 752
476	67 761	67 770	67 779	67 788	67 797	67 806	67 815	67 825	67 834	67 843
477	67 852	67 861	67 870	67 879	67 888	67 897	67 906	67 916	67 925	67 934
478	67 943	67 952	67 961	67 970	67 979	67 988	67 997	68 006	68 015	68 024
479	68 034	68 043	68 052	68 061	68 070	68 079	68 088	68 097	68 106	68 115
480	68 124	68 133	68 142	68 151	68 160	68 169	68 178	68 187	68 196	68 205
481	68 215	68 224	68 233	68 242	68 251	68 260	68 269	68 278	68 287	68 296
482	68 305	68 314	68 323	68 332	68 341	68 350	68 359	68 368	68 377	68 386
483	68 395	68 404	68 413	68 422	68 431	68 440	68 449	68 458	68 467	68 476
484	68 485	68 494	68 502	68 511	68 520	68 529	68 538	68 547	68 556	68 565

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
485	68 574	68 583	68 592	68 601	68 610	68 619	68 628	68 637	68 646	68 655
486	68 664	68 673	68 681	68 690	68 699	68 708	68 717	68 726	68 735	68 744
487	68 753	68 762	68 771	68 780	68 789	68 797	68 806	68 815	68 824	68 833
488	68 842	68 851	68 860	68 869	68 878	68 886	68 895	68 904	68 913	68 922
489	68 931	68 940	68 949	68 958	68 966	68 975	68 984	68 993	69 002	69 011
490	69 020	69 028	69 037	69 046	69 055	69 064	69 073	69 082	69 090	69 099
491	69 108	69 117	69 126	69 135	69 144	69 152	69 161	69 170	69 179	69 188
492	69 197	69 205	69 214	69 223	69 232	69 241	69 249	69 258	69 267	69 276
493	69 285	69 294	69 302	69 311	69 320	69 329	69 338	69 346	69 355	69 364
494	69 373	69 381	69 390	69 399	69 408	69 417	69 425	69 434	69 443	69 452
495	69 461	69 469	69 478	69 487	69 496	69 504	69 513	69 522	69 531	69 539
496	69 548	69 557	69 566	69 574	69 583	69 592	69 601	69 609	69 618	69 627
497	69 636	69 644	69 653	69 662	69 671	69 679	69 688	69 697	69 705	69 714
498	69 723	69 732	69 740	69 749	69 758	69 767	69 775	69 784	69 793	69 801
499	69 810	69 819	69 827	69 836	69 845	69 854	69 862	69 871	69 880	69 888
500	69 897	69 906	69 914	69 923	69 932	69 940	69 949	69 958	69 966	69 975
501	69 984	69 992	70 001	70 010	70 018	70 027	70 036	70 044	70 053	70 062
502	70 070	70 079	70 088	70 096	70 105	70 114	70 122	70 131	70 140	70 148
503	70 157	70 165	70 174	70 183	70 191	70 200	70 209	70 217	70 226	70 234
504	70 243	70 252	70 260	70 269	70 278	70 286	70 295	70 303	70 312	70 321
505	70 329	70 338	70 346	70 355	70 364	70 372	70 381	70 389	70 398	70 406
506	70 415	70 424	70 432	70 441	70 449	70 458	70 467	70 475	70 484	70 492
507	70 501	70 509	70 518	70 526	70 535	70 544	70 552	70 561	70 569	70 578
508	70 586	70 595	70 603	70 612	70 621	70 629	70 638	70 646	70 655	70 663
509	70 672	70 680	70 689	70 697	70 706	70 714	70 723	70 731	70 740	70 749
510	70 757	70 766	70 774	70 783	70 791	70 800	70 808	70 817	70 825	70 834
511	70 842	70 851	70 859	70 868	70 876	70 885	70 893	70 902	70 910	70 919
512	70 927	70 935	70 944	70 952	70 961	70 969	70 978	70 986	70 995	71 003
513	71 012	71 020	71 029	71 037	71 046	71 054	71 063	71 071	71 079	71 088
514	71 096	71 105	71 113	71 122	71 130	71 139	71 147	71 155	71 164	71 172
515	71 181	71 189	71 198	71 206	71 214	71 223	71 231	71 240	71 248	71 257
516	71 265	71 273	71 282	71 290	71 299	71 307	71 315	71 324	71 332	71 341
517	71 349	71 357	71 366	71 374	71 383	71 391	71 399	71 408	71 416	71 425
518	71 433	71 441	71 450	71 458	71 466	71 475	71 483	71 492	71 500	71 508
519	71 517	71 525	71 533	71 542	71 550	71 559	71 567	71 575	71 584	71 592
520	71 600	71 609	71 617	71 625	71 634	71 642	71 650	71 659	71 667	71 675
521	71 684	71 692	71 700	71 709	71 717	71 725	71 734	71 742	71 750	71 759
522	71 767	71 775	71 784	71 792	71 800	71 809	71 817	71 825	71 834	71 842
523	71 850	71 858	71 867	71 875	71 883	71 892	71 900	71 908	71 917	71 925
524	71 933	71 941	71 950	71 958	71 966	71 975	71 983	71 991	71 999	72 008
525	72 016	72 024	72 032	72 041	72 049	72 057	72 066	72 074	72 082	72 090
526	72 099	72 107	72 115	72 123	72 132	72 140	72 148	72 156	72 165	72 173
527	72 181	72 189	72 198	72 206	72 214	72 222	72 230	72 239	72 247	72 255
528	72 263	72 272	72 280	72 288	72 296	72 304	72 313	72 321	72 329	72 337
529	72 346	72 354	72 362	72 370	72 378	72 387	72 395	72 403	72 411	72 419
530	72 428	72 436	72 444	72 452	72 460	72 469	72 477	72 485	72 493	72 501
531	72 509	72 518	72 526	72 534	72 542	72 550	72 558	72 567	72 575	72 583
532	72 591	72 599	72 607	72 616	72 624	72 632	72 640	72 648	72 656	72 665
533	72 673	72 681	72 689	72 697	72 705	72 713	72 722	72 730	72 738	72 746
534	72 754	72 762	72 770	72 779	72 787	72 795	72 803	72 811	72 819	72 827
535	72 835	72 843	72 852	72 860	72 868	72 876	72 884	72 892	72 900	72 908
536	72 916	72 925	72 933	72 941	72 949	72 957	72 965	72 973	72 981	72 989
537	72 997	73 006	73 014	73 022	73 030	73 038	73 046	73 054	73 062	73 070
538	73 078	73 086	73 094	73 102	73 111	73 119	73 127	73 135	73 143	73 151
539	73 159	73 167	73 175	73 183	73 191	73 199	73 207	73 215	73 223	73 231

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
540	73 239	73 247	73 255	73 263	73 272	73 280	73 288	73 296	73 304	73 312
541	73 320	73 328	73 336	73 344	73 352	73 360	73 368	73 376	73 384	73 392
542	73 400	73 408	73 416	73 424	73 432	73 440	73 448	73 456	73 464	73 472
543	73 480	73 488	73 496	73 504	73 512	73 520	73 528	73 536	73 544	73 552
544	73 560	73 568	73 576	73 584	73 592	73 600	73 608	73 616	73 624	73 632
545	73 640	73 648	73 656	73 664	73 672	73 679	73 687	73 695	73 703	73 711
546	73 719	73 727	73 735	73 743	73 751	73 759	73 767	73 775	73 783	73 791
547	73 799	73 807	73 815	73 823	73 830	73 838	73 846	73 854	73 862	73 870
548	73 878	73 886	73 894	73 902	73 910	73 918	73 926	73 933	73 941	73 940
549	73 957	73 965	73 973	73 981	73 989	73 997	74 005	74 013	74 020	74 028
550	74 036	74 044	74 052	74 060	74 068	74 076	74 084	74 092	74 099	74 107
551	74 115	74 123	74 131	74 139	74 147	74 155	74 162	74 170	74 178	74 186
552	74 194	74 202	74 210	74 218	74 225	74 233	74 241	74 249	74 257	74 265
553	74 273	74 280	74 288	74 296	74 304	74 312	74 320	74 327	74 335	74 343
554	74 351	74 359	74 367	74 374	74 382	74 390	74 398	74 406	74 414	74 421
555	74 429	74 437	74 445	74 453	74 461	74 468	74 476	74 484	74 492	74 500
556	74 507	74 515	74 523	74 531	74 539	74 547	74 554	74 562	74 570	74 578
557	74 586	74 593	74 601	74 609	74 617	74 624	74 632	74 640	74 648	74 656
558	74 663	74 671	74 679	74 687	74 695	74 702	74 710	74 718	74 726	74 733
559	74 741	74 749	74 757	74 764	74 772	74 780	74 788	74 796	74 803	74 811
560	74 819	74 827	74 834	74 842	74 850	74 858	74 865	74 873	74 881	74 889
561	74 896	74 904	74 912	74 920	74 927	74 935	74 943	74 950	74 958	74 966
562	74 974	74 981	74 989	74 997	75 005	75 012	75 020	75 028	75 035	75 043
563	75 051	75 059	75 066	75 074	75 082	75 089	75 097	75 105	75 113	75 120
564	75 128	75 136	75 143	75 151	75 159	75 166	75 174	75 182	75 189	75 197
565	75 205	75 213	75 220	75 228	75 236	75 243	75 251	75 259	75 266	75 274
566	75 282	75 289	75 297	75 305	75 312	75 320	75 328	75 335	75 343	75 351
567	75 358	75 366	75 374	75 381	75 389	75 397	75 404	75 412	75 420	75 427
568	75 435	75 442	75 450	75 458	75 465	75 473	75 481	75 488	75 496	75 504
569	75 511	75 519	75 526	75 534	75 542	75 549	75 557	75 565	75 572	75 580
570	75 587	75 595	75 603	75 610	75 618	75 626	75 633	75 641	75 648	75 656
571	75 664	75 671	75 679	75 686	75 694	75 702	75 709	75 717	75 724	75 732
572	75 740	75 747	75 755	75 762	75 770	75 778	75 785	75 793	75 800	75 808
573	75 815	75 823	75 831	75 838	75 846	75 853	75 861	75 868	75 876	75 884
574	75 891	75 899	75 906	75 914	75 921	75 929	75 937	75 944	75 952	75 959
575	75 967	75 974	75 982	75 989	75 997	75 005	76 012	76 020	76 027	76 035
576	76 042	76 050	76 057	76 065	76 072	76 080	76 087	76 095	76 103	76 110
577	76 118	76 125	76 133	76 140	76 148	76 155	76 163	76 170	76 178	76 185
578	76 193	76 200	76 208	76 215	76 223	76 230	76 238	76 245	76 253	76 260
579	76 268	76 275	76 283	76 290	76 298	76 305	76 313	76 320	76 328	76 335
580	76 343	76 350	76 358	76 365	76 373	76 380	76 388	76 395	76 403	76 410
581	76 418	76 425	76 433	76 440	76 448	76 455	76 464	76 470	76 477	76 485
582	76 492	76 500	76 507	76 515	76 522	76 530	76 537	76 545	76 552	76 559
583	76 567	76 574	76 582	76 589	76 597	76 604	76 612	76 619	76 626	76 634
584	76 641	76 649	76 656	76 664	76 671	76 678	76 686	76 693	76 701	76 708
585	76 716	76 723	76 730	76 738	76 745	76 753	76 760	76 768	76 775	76 782
586	76 790	76 797	76 805	76 812	76 819	76 827	76 834	76 842	76 849	76 856
587	76 864	76 871	76 879	76 886	76 893	76 901	76 908	76 916	76 923	76 930
588	76 938	76 945	76 953	76 960	76 967	76 975	76 982	76 989	76 997	77 004
589	77 012	77 019	77 026	77 034	77 041	77 048	77 056	77 063	77 070	77 078
590	77 085	77 093	77 100	77 107	77 115	77 122	77 129	77 137	77 144	77 151
591	77 159	77 166	77 173	77 181	77 188	77 195	77 203	77 210	77 217	77 225
592	77 232	77 240	77 247	77 254	77 262	77 269	77 276	77 283	77 291	77 298
593	77 305	77 313	77 320	77 327	77 335	77 342	77 349	77 357	77 364	77 371
594	77 379	77 386	77 393	77 401	77 408	77 415	77 422	77 430	77 437	77 444

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
595	77 452	77 459	77 466	77 474	77 481	77 488	77 495	77 503	77 510	77 517
596	77 525	77 532	77 539	77 546	77 554	77 561	77 568	77 576	77 583	77 590
597	77 597	77 605	77 612	77 619	77 627	77 634	77 641	77 648	77 656	77 663
598	77 670	77 677	77 685	77 692	77 699	77 706	77 714	77 721	77 728	77 735
599	77 743	77 750	77 757	77 764	77 772	77 779	77 786	77 793	77 801	77 808
600	77 815	77 822	77 830	77 837	77 844	77 851	77 859	77 866	77 873	77 880
601	77 887	77 895	77 902	77 909	77 916	77 924	77 931	77 938	77 945	77 952
602	77 960	77 967	77 974	77 981	77 988	77 996	78 003	78 010	78 017	78 025
603	78 032	78 039	78 046	78 053	78 061	78 068	78 075	78 082	78 089	78 097
604	78 104	78 111	78 118	78 125	78 132	78 140	78 147	78 154	78 161	78 168
605	78 176	78 183	78 190	78 197	78 204	78 211	78 219	78 226	78 233	78 240
606	78 247	78 254	78 262	78 269	78 276	78 283	78 290	78 297	78 305	78 312
607	78 319	78 326	78 333	78 340	78 347	78 355	78 362	78 369	78 376	78 383
608	78 390	78 398	78 405	78 412	78 419	78 426	78 433	78 440	78 447	78 455
609	78 462	78 469	78 476	78 483	78 490	78 497	78 504	78 512	78 519	78 526
610	78 533	78 540	78 547	78 554	78 561	78 569	78 576	78 583	78 590	78 597
611	78 604	78 611	78 618	78 625	78 633	78 640	78 647	78 654	78 661	78 668
612	78 675	78 682	78 689	78 696	78 704	78 711	78 718	78 725	78 732	78 739
613	78 746	78 753	78 760	78 767	78 774	78 781	78 789	78 796	78 803	78 810
614	78 817	78 824	78 831	78 838	78 845	78 852	78 859	78 866	78 873	78 880
615	78 888	78 895	78 902	78 909	78 916	78 923	78 930	78 937	78 944	78 951
616	78 958	78 965	78 972	78 979	78 986	78 993	79 000	79 007	79 014	79 021
617	79 029	79 036	79 043	79 050	79 057	79 064	79 071	79 078	79 085	79 092
618	79 099	79 106	79 113	79 120	79 127	79 134	79 141	79 148	79 155	79 162
619	79 169	79 176	79 183	79 190	79 197	79 204	79 211	79 218	79 225	79 232
620	79 239	79 246	79 253	79 260	79 267	79 274	79 281	79 288	79 295	79 302
621	79 309	79 316	79 323	79 330	79 337	79 344	79 351	79 358	79 365	79 372
622	79 379	79 386	79 393	79 400	79 407	79 414	79 421	79 428	79 435	79 442
623	79 449	79 456	79 463	79 470	79 477	79 484	79 491	79 498	79 505	79 511
624	79 518	79 525	79 532	79 539	79 546	79 553	79 560	79 567	79 574	79 581
625	79 588	79 595	79 602	79 609	79 616	79 623	79 630	79 637	79 644	79 650
626	79 657	79 664	79 671	79 678	79 685	79 692	79 699	79 706	79 713	79 720
627	79 727	79 734	79 741	79 748	79 754	79 761	79 768	79 775	79 782	79 789
628	79 796	79 803	79 810	79 817	79 824	79 831	79 837	79 844	79 851	79 858
629	79 865	79 872	79 879	79 886	79 893	79 900	79 906	79 913	79 920	79 927
630	79 934	79 941	79 948	79 955	79 962	79 969	79 975	79 982	79 989	79 996
631	80 003	80 010	80 017	80 024	80 030	80 037	80 044	80 051	80 058	80 065
632	80 072	80 079	80 085	80 092	80 099	80 106	80 113	80 120	80 127	80 134
633	80 140	80 147	80 154	80 161	80 168	80 175	80 182	80 188	80 195	80 202
634	80 209	80 216	80 223	80 229	80 236	80 243	80 250	80 257	80 264	80 271
635	80 277	80 284	80 291	80 298	80 305	80 312	80 318	80 325	80 332	80 339
636	80 346	80 353	80 359	80 366	80 373	80 380	80 387	80 393	80 400	80 407
637	80 414	80 421	80 428	80 434	80 441	80 448	80 455	80 462	80 468	80 475
638	80 482	80 489	80 496	80 502	80 509	80 516	80 523	80 530	80 536	80 543
639	80 550	80 557	80 564	80 570	80 577	80 584	80 591	80 598	80 604	80 611
640	80 618	80 625	80 632	80 638	80 645	80 652	80 659	80 665	80 672	80 679
641	80 686	80 693	80 699	80 706	80 713	80 720	80 726	80 733	80 740	80 747
642	80 754	80 760	80 767	80 774	80 781	80 787	80 794	80 801	80 808	80 814
643	80 821	80 828	80 835	80 841	80 848	80 855	80 862	80 868	80 975	80 882
644	80 889	80 895	80 902	80 909	80 916	80 922	80 929	80 936	80 943	80 949
645	80 956	80 963	80 969	80 976	80 983	80 990	80 996	81 003	81 010	81 017
646	81 023	81 030	81 037	81 043	81 050	81 057	81 064	81 070	81 077	81 084
647	81 090	81 097	81 104	81 111	81 117	81 124	81 131	81 137	81 144	81 151
648	81 158	81 164	81 171	81 178	81 184	81 191	81 198	81 204	81 211	81 218
649	81 224	81 231	81 238	81 245	81 251	81 258	81 265	81 271	81 278	81 285

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
650	81 291	81 298	81 305	81 311	81 318	81 325	81 331	81 338	81 345	81 351
651	81 358	81 365	81 371	81 378	81 385	81 391	81 398	81 405	81 411	81 418
652	81 425	81 431	81 438	81 445	81 451	81 458	81 465	81 471	81 478	81 485
653	81 491	81 498	81 505	81 511	81 518	81 525	81 531	81 538	81 544	81 551
654	81 558	81 564	81 571	81 578	81 584	81 591	81 598	81 604	81 611	81 617
655	81 624	81 631	81 637	81 644	81 651	81 657	81 664	81 671	81 677	81 684
656	81 690	81 697	81 704	81 710	81 717	81 723	81 730	81 737	81 743	81 750
657	81 757	81 763	81 770	81 776	81 783	81 790	81 796	81 803	81 809	81 816
658	81 823	81 829	81 836	81 842	81 849	81 856	81 862	81 869	81 875	81 882
659	81 889	81 895	81 902	81 908	81 915	81 921	81 928	81 935	81 941	81 948
660	81 954	81 961	81 968	81 974	81 981	81 987	81 994	82 000	82 007	82 014
661	82 020	82 027	82 033	82 040	82 046	82 053	82 060	82 066	82 073	82 079
662	82 086	82 092	82 099	82 105	82 112	82 119	82 125	82 132	82 138	82 145
663	82 151	82 158	82 164	82 171	82 178	82 184	82 191	82 197	82 204	82 210
664	82 217	82 223	82 230	82 236	82 243	82 249	82 256	82 263	82 269	82 276
665	82 282	82 289	82 295	82 302	82 308	82 315	82 321	82 328	82 334	82 341
666	82 347	82 354	82 360	82 367	82 373	82 380	82 387	82 393	82 400	82 406
667	82 413	82 419	82 426	82 432	82 439	82 445	82 452	82 458	82 465	82 471
668	82 478	82 484	82 491	82 497	82 504	82 510	82 517	82 523	82 530	82 536
669	82 543	82 549	82 556	82 562	82 569	82 575	82 582	82 588	82 595	82 601
670	82 607	82 614	82 620	82 627	82 633	82 640	82 646	82 653	82 659	82 666
671	82 672	82 679	82 685	82 692	82 698	82 705	82 711	82 718	82 724	82 730
672	82 737	82 743	82 750	82 756	82 763	82 769	82 776	82 782	82 789	82 795
673	82 802	82 808	82 814	82 821	82 827	82 834	82 840	82 847	82 853	82 860
674	82 866	82 872	82 879	82 885	82 892	82 898	82 905	82 911	82 918	82 924
675	82 930	82 937	82 943	82 950	82 956	82 963	82 969	82 975	82 982	82 988
676	82 995	83 001	83 008	83 014	83 020	83 027	83 033	83 040	83 046	83 052
677	83 059	83 065	83 072	83 078	83 085	83 091	83 097	83 104	83 110	83 117
678	83 123	83 129	83 136	83 142	83 149	83 155	83 161	83 168	83 174	83 181
679	83 187	83 193	83 200	83 206	83 213	83 219	83 225	83 232	83 238	83 245
680	83 251	83 257	83 264	83 270	83 276	83 283	83 289	83 296	83 302	83 308
681	83 315	83 321	83 327	83 334	83 340	83 347	83 353	83 359	83 366	83 372
682	83 378	83 385	83 391	83 398	83 404	83 410	83 417	83 423	83 429	83 436
683	83 442	83 448	83 455	83 461	83 467	83 474	83 480	83 487	83 493	83 499
684	83 506	83 512	83 518	83 525	83 531	83 537	83 544	83 550	83 556	83 563
685	83 569	83 575	83 582	83 588	83 594	83 601	83 607	83 613	83 620	83 626
686	83 632	83 639	83 645	83 651	83 658	83 664	83 670	83 677	83 683	83 689
687	83 696	83 702	83 708	83 715	83 721	83 727	83 734	83 740	83 746	83 753
688	83 759	83 765	83 771	83 778	83 784	83 790	83 797	83 803	83 809	83 816
689	83 822	83 828	83 835	83 841	83 847	83 853	83 860	83 866	83 872	83 879
690	83 885	83 891	83 897	83 904	83 910	83 916	83 923	83 929	83 935	83 942
691	83 948	83 954	83 960	83 967	83 973	83 979	83 985	83 992	83 998	84 004
692	84 011	84 017	84 023	84 029	84 036	84 042	84 048	84 055	84 061	84 067
693	84 073	84 080	84 086	84 092	84 098	84 105	84 111	84 117	84 123	84 130
694	84 136	84 142	84 148	84 155	84 161	84 167	84 173	83 180	84 186	84 192
695	84 198	84 205	84 211	84 217	84 223	84 230	84 236	84 242	84 248	84 255
696	84 261	84 267	84 273	84 280	84 286	84 292	84 298	84 305	84 311	84 317
697	84 323	84 330	84 336	84 342	84 348	84 354	84 361	84 367	84 373	84 379
698	84 386	84 392	84 398	84 404	84 410	84 417	84 423	84 429	84 435	84 442
699	84 448	84 454	84 460	84 466	84 473	84 479	84 485	84 491	84 497	84 504
700	84 510	84 516	84 522	84 528	84 535	84 541	84 547	84 553	84 559	84 566
701	84 572	84 578	84 584	84 590	84 597	84 603	84 609	84 615	84 621	84 628
702	84 634	84 640	84 646	84 652	84 658	84 665	84 671	84 677	84 683	84 689
703	84 696	84 702	84 708	84 714	84 720	84 726	84 733	84 739	84 745	84 751
704	84 757	84 763	84 770	84 776	84 782	84 788	84 794	84 800	84 807	84 813

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
705	84 819	84 825	84 831	84 837	84 844	84 850	84 856	84 862	84 868	84 874
706	84 880	84 887	84 893	84 899	84 905	84 911	84 917	84 924	84 930	84 936
707	84 942	84 948	84 954	84 960	84 967	94 973	84 979	84 985	84 991	84 997
708	85 003	85 009	85 016	85 022	85 028	85 034	85 040	85 046	85 052	85 058
709	85 065	85 071	85 077	85 083	85 089	85 095	85 101	85 107	85 114	85 120
710	85 126	85 132	85 138	85 144	85 150	85 156	85 163	85 169	85 175	85 181
711	85 187	85 193	85 199	85 205	85 211	85 217	85 224	85 230	85 236	85 242
712	85 248	85 254	85 260	85 266	85 272	85 278	85 285	85 291	85 297	85 303
713	85 309	85 315	85 321	85 327	85 333	85 339	85 345	85 352	85 358	85 364
714	85 370	85 376	85 382	85 388	85 394	85 400	85 406	85 412	85 418	85 425
715	85 431	85 437	85 443	85 449	85 455	85 461	85 467	85 473	85 479	85 485
716	85 491	85 497	85 503	85 509	85 516	85 522	85 528	85 534	85 540	85 546
717	85 552	85 558	85 564	85 570	85 576	85 582	85 588	85 594	85 600	85 606
718	85 612	85 618	85 625	85 631	85 637	85 643	85 649	85 655	85 661	85 667
719	85 673	85 679	85 685	85 691	85 697	85 703	85 709	85 715	85 721	85 727
720	85 733	85 739	85 745	85 751	85 757	85 763	85 769	85 775	85 781	85 788
721	85 794	85 800	85 806	85 812	85 818	85 824	85 830	85 836	85 842	85 848
722	85 854	85 860	85 866	85 872	85 878	85 884	85 890	85 896	85 902	85 908
723	85 914	85 920	85 926	85 932	85 938	85 944	85 950	85 956	85 962	85 968
724	85 974	85 980	85 986	85 992	85 998	86 004	86 010	86 016	86 022	86 028
725	86 034	86 040	86 046	86 052	86 058	86 064	86 070	86 076	86 082	86 088
726	86 094	86 100	86 106	86 112	86 118	86 124	86 130	86 136	86 141	86 147
727	86 153	86 159	86 165	86 171	86 177	86 183	86 189	86 195	86 201	86 207
728	86 213	86 219	86 225	86 231	86 237	86 243	86 249	86 255	86 261	86 267
729	86 273	86 279	86 285	86 291	86 297	86 303	86 308	86 314	86 320	86 326
730	86 332	86 338	86 344	86 350	86 356	86 362	86 368	86 374	86 380	86 386
731	86 392	86 398	86 404	86 410	86 415	86 421	86 427	86 433	86 439	86 445
732	86 451	86 457	86 463	86 469	86 475	86 481	86 487	86 493	86 499	86 504
733	86 510	86 516	86 522	86 528	86 534	86 540	86 546	86 552	86 558	86 564
734	86 570	86 576	86 581	86 587	86 593	86 599	86 605	86 611	86 617	86 623
735	86 629	86 635	86 641	86 646	86 652	86 658	86 664	86 670	86 676	86 682
736	86 688	86 694	86 700	86 705	86 711	86 717	86 723	86 729	86 735	86 741
737	86 747	86 753	86 759	86 764	86 770	86 776	86 782	86 788	86 794	86 800
738	86 806	86 812	86 817	86 823	86 829	86 835	86 841	86 847	86 853	86 859
739	86 864	86 870	86 876	86 882	86 888	86 894	86 900	86 906	86 911	86 917
740	86 923	86 929	86 935	86 941	86 947	86 953	86 958	86 964	86 970	86 976
741	86 982	86 988	86 994	86 999	87 005	87 011	87 017	87 023	87 029	87 035
742	87 040	87 046	87 052	87 058	87 064	87 070	87 075	87 081	87 087	87 093
743	87 099	87 105	87 111	87 116	87 122	87 128	87 134	87 140	87 146	87 151
744	87 157	87 163	87 169	87 175	87 181	87 186	87 192	87 198	87 204	87 210
745	87 216	87 221	87 227	87 233	87 239	87 245	87 251	87 256	87 262	87 268
746	87 274	87 280	87 286	87 291	87 297	87 303	87 309	87 315	87 320	87 326
747	87 332	87 338	87 344	87 349	87 355	87 361	87 367	87 373	87 379	87 384
748	87 390	87 396	87 402	87 408	87 413	87 419	87 425	87 431	87 437	87 442
749	87 448	87 454	87 460	87 466	87 471	87 477	87 483	87 489	87 495	87 500
750	87 506	87 512	87 518	87 523	87 529	87 535	87 541	87 547	87 552	87 558
751	87 564	87 570	87 576	87 581	87 587	87 593	87 599	87 604	87 610	87 616
752	87 622	87 628	87 633	87 639	87 645	87 651	87 656	87 662	87 668	87 674
753	87 679	87 685	87 691	87 697	87 703	87 708	87 714	87 720	87 726	87 731
754	87 737	87 743	87 749	87 754	87 760	87 766	87 772	87 777	87 783	87 789
755	87 795	87 800	87 806	87 812	87 818	87 823	87 829	87 835	87 841	87 846
756	87 852	87 858	87 864	87 869	87 875	87 881	87 887	87 892	87 898	87 904
757	87 910	87 915	87 921	87 927	87 933	87 938	87 944	87 950	87 955	87 961
758	87 967	87 973	87 978	87 984	87 990	87 996	88 001	88 007	88 013	88 018
759	88 024	88 030	88 036	88 041	88 047	88 053	88 058	88 064	88 070	88 076

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
760	88 081	88 087	88 093	88 098	88 104	88 110	88 116	88 121	88 127	88 133
761	88 138	88 144	88 150	88 156	88 161	88 167	88 173	88 178	88 184	88 190
762	88 195	88 201	88 207	88 213	88 218	88 224	88 230	88 235	88 241	88 247
763	88 252	88 258	88 264	88 270	88 275	88 281	88 287	88 292	88 298	88 304
764	88 309	88 315	88 321	88 326	88 332	88 338	88 343	88 349	88 355	88 360
765	88 366	88 372	88 377	88 383	88 389	88 395	88 400	88 406	88 412	88 417
766	88 423	88 429	88 434	88 440	88 446	88 451	88 457	88 463	88 468	88 474
767	88 480	88 485	88 491	88 497	88 502	88 508	88 513	88 519	88 525	88 530
768	88 536	88 542	88 547	88 553	88 559	88 564	88 570	88 576	88 581	88 587
769	88 593	88 598	88 604	88 610	88 615	88 621	88 627	88 632	88 638	88 643
770	88 649	88 655	88 660	88 666	88 672	88 677	88 683	88 689	88 694	88 700
771	88 705	88 711	88 717	88 722	88 728	88 734	88 739	88 745	88 750	88 756
772	88 762	88 767	88 773	88 779	88 784	88 790	88 795	88 801	88 807	88 812
773	88 818	88 824	88 829	88 835	88 840	88 846	88 852	88 857	88 863	88 868
774	88 874	88 880	88 885	88 891	88 897	88 902	88 908	88 913	88 919	88 925
775	88 930	88 936	88 941	88 947	88 953	88 958	88 964	88 969	88 975	88 981
776	88 986	88 992	88 997	89 003	89 009	89 014	89 020	89 025	89 031	89 037
777	89 042	89 048	89 053	89 059	89 064	89 070	89 076	89 081	89 087	89 092
778	89 098	89 104	89 109	89 115	89 120	89 126	89 131	89 137	89 143	89 148
779	89 154	89 159	89 165	89 170	89 176	89 182	89 187	89 193	89 198	89 204
780	89 209	89 215	89 221	89 226	89 232	89 237	89 243	89 248	89 254	89 260
781	89 265	89 271	89 276	89 282	89 287	89 293	89 298	89 304	89 310	89 315
782	89 321	89 326	89 332	89 337	89 343	89 348	89 354	89 360	89 365	89 371
783	89 376	89 382	89 387	89 393	89 398	89 404	89 409	89 415	89 421	89 426
784	89 432	89 437	89 443	89 448	89 454	89 459	89 465	89 470	89 476	89 481
785	89 487	89 492	89 498	89 504	89 509	89 515	89 520	89 526	89 531	89 537
786	89 542	89 548	89 553	89 559	89 564	89 570	89 575	89 581	89 586	89 592
787	89 597	89 603	89 609	89 614	89 620	89 625	89 631	89 636	89 642	89 647
788	89 653	89 658	89 664	89 669	89 675	89 680	89 686	89 691	89 697	89 702
789	89 708	89 713	89 719	89 724	89 730	89 735	89 741	89 746	89 752	89 757
790	89 763	89 768	89 774	89 779	89 785	89 790	89 796	89 801	89 807	89 812
791	89 818	89 823	89 829	89 834	89 840	89 845	89 851	89 856	89 862	89 867
792	89 873	89 878	89 883	89 889	89 894	89 900	89 905	89 911	89 916	89 922
793	89 927	89 933	89 938	89 944	89 949	89 955	89 960	89 966	89 971	89 977
794	89 982	89 988	89 993	89 998	90 004	90 009	90 015	90 020	90 026	90 031
795	90 037	90 042	90 048	90 053	90 059	90 064	90 069	90 075	90 080	90 086
796	90 091	90 097	90 102	90 108	90 113	90 119	90 124	90 129	90 135	90 140
797	90 146	90 151	90 157	90 162	90 168	90 173	90 179	90 184	90 189	90 195
798	90 200	90 206	90 211	90 217	90 222	90 227	90 233	90 238	90 244	90 249
799	90 255	90 260	90 266	90 271	90 276	90 282	90 287	90 293	90 298	90 304
800	90 309	90 314	90 320	90 325	90 331	90 336	90 342	90 347	90 352	90 358
801	90 363	90 369	90 374	90 380	90 385	90 390	90 396	90 401	90 407	90 412
802	90 417	90 423	90 428	90 434	90 439	90 445	90 450	90 455	90 461	90 466
803	90 472	90 477	90 482	90 488	90 493	90 499	90 504	90 509	90 515	90 520
804	90 526	90 531	90 536	90 542	90 547	90 553	90 558	90 563	90 569	90 574
805	90 580	90 585	90 590	90 596	90 601	90 607	90 612	90 617	90 623	90 628
806	90 634	90 639	90 644	90 650	90 655	90 660	90 666	90 671	90 677	90 682
807	90 687	90 693	90 698	90 703	90 709	90 714	90 720	90 725	90 730	90 736
808	90 741	90 747	90 752	90 757	90 763	90 768	90 773	90 779	90 784	90 789
809	90 795	90 800	90 806	90 811	90 816	90 822	90 827	90 832	90 838	90 843
810	90 849	90 854	90 859	90 865	90 870	90 875	90 881	90 886	90 891	90 897
811	90 902	90 907	90 913	90 918	90 924	90 929	90 934	90 940	90 945	90 950
812	90 956	90 961	90 966	90 972	90 977	90 982	90 988	90 993	90 998	91 004
813	91 009	91 014	91 020	91 025	91 030	91 036	91 041	91 046	91 052	91 057
814	91 062	91 068	91 073	91 078	91 084	91 089	91 094	91 100	91 105	91 110

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
815	91 116	91 121	91 126	91 132	91 137	91 142	91 148	91 153	91 158	91 164
816	91 169	91 174	91 180	91 185	91 190	91 196	91 201	91 206	91 212	91 217
817	91 222	91 228	91 233	91 238	91 243	91 249	91 254	91 259	91 265	91 270
818	91 275	91 281	91 286	91 291	91 297	91 302	91 307	91 312	91 318	91 323
819	91 328	91 334	91 339	91 344	91 350	91 355	91 360	91 365	91 371	91 376
820	91 381	91 387	91 392	91 397	91 403	91 408	91 413	91 418	91 424	91 429
821	91 434	91 440	91 445	91 450	91 455	91 461	91 466	91 471	91 477	91 482
822	91 487	91 492	91 498	91 503	91 508	91 514	91 519	91 524	91 529	91 535
823	91 540	91 545	91 551	91 556	91 561	91 566	91 572	91 577	91 582	91 587
824	91 593	91 598	91 603	91 609	91 614	91 619	91 624	91 630	91 635	91 640
825	91 645	91 651	91 656	91 661	91 666	91 672	91 677	91 682	91 687	91 693
826	91 698	91 703	91 709	91 714	91 719	91 724	91 730	91 735	91 740	91 745
827	91 751	91 756	91 761	91 766	91 772	91 777	91 782	91 787	91 793	91 798
828	91 803	91 808	91 814	91 819	91 824	91 829	91 834	91 840	91 845	91 850
829	91 855	91 861	91 866	91 871	91 876	91 882	91 887	91 892	91 897	91 903
830	91 908	91 913	91 918	91 924	91 929	91 934	91 939	91 944	91 950	91 955
831	91 960	91 965	91 971	91 976	91 981	91 986	91 991	91 997	92 002	92 007
832	92 012	92 018	92 023	92 028	92 033	92 038	92 044	92 049	92 054	92 059
833	92 065	92 070	92 075	92 080	92 085	92 091	92 096	92 101	92 106	92 111
834	92 117	92 122	92 127	92 132	92 137	92 143	92 148	92 153	92 158	92 163
835	92 169	92 174	92 179	92 184	92 189	92 195	92 200	92 205	92 210	92 215
836	92 221	92 226	92 231	92 236	92 241	92 247	92 252	92 257	92 262	92 267
837	92 273	92 278	92 283	92 288	92 293	92 298	92 304	92 309	92 314	92 319
838	92 324	92 330	92 335	92 340	92 345	92 350	92 355	92 361	92 366	92 371
839	92 376	92 381	92 387	92 392	92 397	92 402	92 407	92 412	92 418	92 423
840	92 428	92 433	92 438	92 443	92 449	92 454	92 459	92 464	92 469	92 474
841	92 480	92 485	92 490	92 495	92 500	92 505	92 511	92 516	92 521	92 526
842	92 531	92 536	92 542	92 547	92 552	92 557	92 562	92 567	92 572	92 578
843	92 583	92 588	92 593	92 598	92 603	92 609	92 614	92 619	92 624	92 629
844	92 634	92 639	92 645	92 650	92 655	92 660	92 665	92 670	92 675	92 681
845	92 686	92 691	92 696	92 701	92 706	92 711	92 716	92 722	92 727	92 732
846	92 737	92 742	92 747	92 752	92 758	92 763	92 768	92 773	92 778	92 783
847	92 788	92 793	92 799	92 804	92 809	92 814	92 819	92 824	92 829	92 834
848	92 840	92 845	92 850	92 855	92 860	92 865	92 870	92 875	92 881	92 886
849	92 891	92 896	92 901	92 906	92 911	92 916	92 921	92 927	92 932	92 937
850	92 942	92 947	92 952	92 957	92 962	92 967	92 973	92 978	92 983	92 988
851	92 993	92 998	93 003	93 008	93 013	93 018	93 024	93 029	93 034	93 039
852	93 044	93 049	93 054	93 059	93 064	93 069	93 075	93 080	93 085	93 090
853	93 095	93 100	93 105	93 110	93 115	93 120	93 125	93 131	93 136	93 141
854	93 146	93 151	93 156	93 161	93 166	93 171	93 176	93 181	93 186	93 192
855	93 197	93 202	93 207	93 212	93 217	93 222	93 227	93 232	93 237	93 242
856	93 247	93 252	93 258	93 263	93 268	93 273	93 278	93 283	93 288	93 293
857	93 298	93 303	93 308	93 313	93 318	93 323	93 328	93 334	93 339	93 344
858	93 349	93 354	93 359	93 364	93 369	93 374	93 379	93 384	93 389	93 394
859	93 399	93 404	93 409	93 414	93 420	93 425	93 430	93 435	93 440	93 445
860	93 450	93 455	93 460	93 465	93 470	93 475	93 480	93 485	93 490	93 495
861	93 500	93 505	93 510	93 515	93 520	93 526	93 531	93 536	93 541	93 546
862	93 551	93 556	93 561	93 566	93 571	93 576	93 581	93 586	93 591	93 596
863	93 601	93 606	93 611	93 616	93 621	93 626	93 631	93 636	93 641	93 646
864	93 651	93 656	93 661	93 666	93 671	93 676	93 682	93 687	93 692	93 697
865	93 702	93 707	93 712	93 717	93 722	93 727	93 732	93 737	93 742	93 747
866	93 752	93 757	93 762	93 767	93 772	93 777	93 782	93 787	93 792	93 797
867	93 802	93 807	93 812	93 817	93 822	93 827	93 832	93 837	93 842	93 847
868	93 852	93 857	93 862	93 867	93 872	93 877	93 882	93 887	93 892	93 897
869	93 902	93 907	93 912	93 917	93 922	93 927	93 932	93 937	93 942	93 947

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
870	93 952	93 957	93 962	93 967	93 972	93 977	93 982	93 987	93 992	93 997
871	94 002	94 007	94 012	94 017	94 022	94 027	94 032	94 037	94 042	94 047
872	94 052	94 057	94 062	94 067	94 072	94 077	94 082	94 086	94 091	94 096
873	94 101	94 106	94 111	94 116	94 121	94 126	94 131	94 136	94 141	94 146
874	94 151	94 156	94 161	94 166	94 171	94 176	94 181	94 186	94 191	94 196
875	94 201	94 206	94 211	94 216	94 221	94 226	94 231	94 236	94 240	94 245
876	94 250	94 255	94 260	94 265	94 270	94 275	94 280	94 285	94 290	94 295
877	94 300	94 305	94 310	94 315	94 320	94 325	94 330	94 335	94 340	94 345
878	94 349	94 354	94 359	94 364	94 369	94 374	94 379	94 384	94 389	94 394
879	94 399	94 404	94 409	94 414	94 419	94 424	94 429	94 433	94 438	94 443
880	94 448	94 453	94 458	94 463	94 468	94 473	94 478	94 483	94 488	94 493
881	94 498	94 503	94 507	94 512	94 517	94 522	94 527	94 532	94 537	94 542
882	94 547	94 552	94 557	94 562	94 567	94 571	94 576	94 581	94 586	94 591
883	94 596	94 601	94 606	94 611	94 616	94 621	94 626	94 630	94 635	94 640
884	94 645	94 650	94 655	94 660	94 665	94 670	94 675	94 680	94 685	94 689
885	94 694	94 699	94 704	94 709	94 714	94 719	94 724	94 729	94 734	94 738
886	94 743	94 748	94 753	94 758	94 763	94 768	94 773	94 778	94 783	94 787
887	94 792	94 797	94 802	94 807	94 812	94 817	94 822	94 827	94 832	94 836
888	94 841	94 846	94 851	94 856	94 861	94 866	94 871	94 876	94 880	94 885
889	94 890	94 895	94 900	94 905	94 910	94 915	94 919	94 924	94 929	94 934
890	94 939	94 944	94 949	94 954	94 959	94 963	94 968	94 973	94 978	94 983
891	94 988	94 993	94 998	95 002	95 007	95 012	95 017	95 022	95 027	95 032
892	95 036	95 041	95 046	95 051	95 056	95 061	95 066	95 071	95 075	95 080
893	95 085	95 090	95 095	95 100	95 105	95 109	95 114	95 119	95 124	95 129
894	95 134	95 139	95 143	95 148	95 153	95 158	95 163	95 168	95 173	95 177
895	95 182	95 187	95 192	95 197	95 202	95 207	95 211	95 216	95 221	95 226
896	95 231	95 236	95 240	95 245	95 250	95 255	95 260	95 265	95 270	95 274
897	95 279	95 284	95 289	95 294	95 299	95 303	95 308	95 313	95 318	95 323
898	95 328	95 332	95 337	95 342	95 347	95 352	95 357	95 361	95 366	95 371
899	95 376	95 381	95 386	95 390	95 395	95 400	95 405	95 410	95 415	95 419
900	95 424	95 429	95 434	95 439	95 444	95 448	95 453	95 458	95 463	95 468
901	95 472	95 477	95 482	95 487	95 492	95 497	95 501	95 506	95 511	95 516
902	95 521	95 525	95 530	95 535	95 540	95 545	95 550	95 554	95 559	95 564
903	95 569	95 574	95 578	95 583	95 588	95 593	95 598	95 602	95 607	95 612
904	95 617	95 622	95 626	95 631	95 636	95 641	95 646	95 650	95 655	95 660
905	95 665	95 670	95 674	95 679	95 684	95 689	95 694	95 698	95 703	95 708
906	95 713	95 718	95 722	95 727	95 732	95 737	95 742	95 746	95 751	95 756
907	95 761	95 766	95 770	95 775	95 780	95 785	95 789	95 794	95 799	95 804
908	95 809	95 813	95 818	95 823	95 828	95 832	95 837	95 842	95 847	95 852
909	95 856	95 861	95 866	95 871	95 875	95 880	95 885	95 890	95 895	95 899
910	95 904	95 909	95 914	95 918	95 923	95 928	95 933	95 938	95 942	95 947
911	95 952	95 957	95 961	95 966	95 971	95 976	95 980	95 985	95 990	95 995
912	95 999	96 004	96 009	96 014	96 019	96 023	96 028	96 033	96 038	96 042
913	96 047	96 052	96 057	96 061	96 066	96 071	96 076	96 080	96 085	96 090
914	96 095	96 099	96 104	96 109	96 114	96 118	96 123	96 128	96 133	96 137
915	96 142	96 147	96 152	96 156	96 161	96 166	96 171	96 175	96 180	96 185
916	96 190	96 194	96 199	96 204	96 209	96 213	96 218	96 223	96 227	96 232
917	96 237	96 242	96 246	96 251	96 256	96 261	96 265	96 270	96 275	96 280
918	96 284	96 289	96 294	96 298	96 303	96 308	96 313	96 317	96 322	96 327
919	96 332	96 336	96 341	96 346	96 350	96 355	96 360	96 365	96 369	96 374
920	96 379	96 384	96 388	96 393	96 398	96 402	96 407	96 412	96 417	96 421
921	96 426	96 431	96 435	96 440	96 445	96 450	96 454	96 459	96 464	96 468
922	96 473	96 478	96 483	96 487	96 492	96 497	96 501	96 506	96 511	96 515
923	96 520	96 525	96 530	96 534	96 539	96 544	96 548	96 553	96 558	96 562
924	96 567	96 572	96 577	96 581	96 586	96 591	96 595	96 600	96 605	96 609

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
925	96 614	96 619	96 624	96 628	96 633	96 638	96 642	96 647	96 652	96 656
926	96 661	96 666	96 670	96 675	96 680	96 685	96 689	96 694	96 699	96 703
927	96 708	96 713	96 717	96 722	96 727	96 731	96 736	96 741	96 745	96 750
928	96 755	96 759	96 764	96 769	96 774	96 778	96 783	96 788	96 792	96 797
929	96 802	96 806	96 811	96 816	96 820	96 825	96 830	96 834	96 839	96 844
930	96 848	96 853	96 858	96 862	96 867	96 872	96 876	96 881	96 886	96 890
931	96 895	96 900	96 904	96 909	96 914	96 918	96 923	96 928	96 932	96 937
932	96 942	96 946	96 951	96 956	96 960	96 965	96 970	96 974	96 979	96 984
933	96 988	96 993	96 997	97 002	97 007	97 011	97 016	97 021	97 025	97 030
934	97 035	97 039	97 044	97 049	97 053	97 058	97 063	97 067	97 072	97 077
935	97 081	97 086	97 090	97 095	97 100	97 104	97 109	97 114	97 118	97 123
936	97 128	97 132	97 137	97 142	97 146	97 151	97 155	97 160	97 165	97 169
937	97 174	97 179	97 183	97 188	97 192	97 197	97 202	97 206	97 211	97 216
938	97 220	97 225	97 230	97 234	97 239	97 243	97 248	97 253	97 257	97 262
939	97 267	97 271	97 276	97 280	97 285	97 290	97 294	97 299	97 304	97 308
940	97 313	97 317	97 322	97 327	97 331	97 336	97 340	97 345	97 350	97 354
941	97 359	97 364	97 368	97 373	97 377	97 382	97 387	97 391	97 396	97 400
942	97 405	97 410	97 414	97 419	97 424	97 428	97 433	97 437	97 442	97 447
943	97 451	97 456	97 460	97 465	97 470	97 474	97 479	97 483	97 488	97 493
944	97 497	97 502	97 506	97 511	97 516	97 520	97 525	97 529	97 534	97 539
945	97 543	97 548	97 552	97 557	97 562	97 566	97 571	97 575	97 580	97 585
946	97 589	97 594	97 598	97 603	97 607	97 612	97 617	97 621	97 626	97 630
947	97 635	97 640	97 644	97 649	97 653	97 658	97 663	97 667	97 672	97 676
948	97 681	97 685	97 690	97 695	97 699	97 704	97 708	97 713	97 717	97 722
949	97 727	97 731	97 736	97 740	97 745	97 749	97 754	97 759	97 763	97 768
950	97 772	97 777	97 782	97 786	97 791	97 795	97 800	97 804	97 809	97 813
951	97 818	97 823	97 827	97 832	97 836	97 841	97 845	97 850	97 855	97 859
952	97 864	97 868	97 873	97 877	97 882	97 886	97 891	97 896	97 900	97 905
953	97 909	97 914	97 918	97 923	97 928	97 932	97 937	97 941	97 946	97 950
954	97 955	97 959	97 964	97 968	97 973	97 978	97 982	97 987	97 991	97 996
955	98 000	98 005	98 009	98 014	98 019	98 023	98 028	98 032	98 037	98 041
956	98 046	98 050	98 055	98 059	98 064	98 068	98 073	98 078	98 082	98 087
957	98 091	98 096	98 100	98 105	98 109	98 114	98 118	98 123	98 127	98 132
958	98 137	98 141	98 146	98 150	98 155	98 159	98 164	98 168	98 173	98 177
959	98 182	98 186	98 191	98 195	98 200	98 204	98 209	98 214	98 218	98 223
960	98 227	98 232	98 236	98 241	98 245	98 250	98 254	98 259	98 263	98 268
961	98 272	98 277	98 281	98 286	98 290	98 295	98 299	98 304	98 308	98 313
962	98 318	98 322	98 327	98 331	98 336	98 340	98 345	98 349	98 354	98 358
963	98 363	98 367	98 372	98 376	98 381	98 385	98 390	98 394	98 399	98 403
964	98 408	98 412	98 417	98 421	98 426	98 430	98 435	98 439	98 444	98 448
965	98 453	98 457	98 462	98 466	98 471	98 475	98 480	98 484	98 489	98 493
966	98 498	98 502	98 507	98 511	98 516	98 520	98 525	98 529	98 534	98 538
967	98 543	98 547	98 552	98 556	98 561	98 565	98 570	98 574	98 579	98 583
968	98 588	98 592	98 597	98 601	98 605	98 610	98 614	98 619	98 623	98 628
969	98 632	98 637	98 641	98 646	98 650	98 655	98 659	98 664	98 668	98 673
970	98 677	98 682	98 686	98 691	98 695	98 700	98 704	98 709	98 713	98 717
971	98 722	98 726	98 731	98 735	98 740	98 744	98 749	98 753	98 758	98 762
972	98 767	98 771	98 776	98 780	98 784	98 789	98 793	98 798	98 802	98 807
973	98 811	98 816	98 820	98 825	98 829	98 834	98 838	98 843	98 847	98 851
974	98 856	98 860	98 865	98 869	98 874	98 878	98 883	98 887	98 892	98 896
975	98 900	98 905	98 909	98 914	98 918	98 923	98 927	98 932	98 936	98 941
976	98 945	98 949	98 954	98 958	98 963	98 967	98 972	98 976	98 981	98 985
977	98 989	98 994	98 998	99 003	99 007	99 012	99 016	99 021	99 025	99 029
978	99 034	99 038	99 043	99 047	99 052	99 056	99 061	99 065	99 069	99 074
979	99 078	99 083	99 087	99 092	99 096	99 100	99 105	99 109	99 114	99 118

Logarithms of Numbers—Continued

No.	0	1	2	3	4	5	6	7	8	9
980	99 123	99 127	99 131	99 136	99 140	99 145	99 149	99 154	99 158	99 162
981	99 167	99 171	99 176	99 180	99 185	99 189	99 193	99 198	99 202	99 207
982	99 211	99 216	99 220	99 224	99 229	99 233	99 238	99 242	99 247	99 251
983	99 255	99 260	99 264	99 269	99 273	99 277	99 282	99 286	99 291	99 295
984	99 300	99 304	99 308	99 313	99 317	99 322	99 326	99 330	99 335	99 339
985	99 344	99 348	99 352	99 357	99 361	99 366	99 370	99 374	99 379	99 383
986	99 388	99 392	99 396	99 401	99 405	99 410	99 414	99 419	99 423	99 427
987	99 432	99 436	99 441	99 445	99 449	99 454	99 458	99 463	99 467	99 471
988	99 476	99 480	99 484	99 489	99 493	99 498	99 502	99 506	99 511	99 515
989	99 520	99 524	99 528	99 533	99 537	99 542	99 546	99 550	99 555	99 559
990	99 564	99 568	99 572	99 577	99 581	99 585	99 590	99 594	99 599	99 603
991	99 607	99 612	99 616	99 621	99 625	99 629	99 634	99 638	99 642	99 647
992	99 651	99 656	99 660	99 664	99 669	99 673	99 677	99 682	99 686	99 691
993	99 695	99 699	99 704	99 708	99 712	99 717	99 721	99 726	99 730	99 734
994	99 739	99 743	99 747	99 752	99 756	99 760	99 765	99 769	99 774	99 778
995	99 782	99 787	99 791	99 795	99 800	99 804	99 808	99 813	99 817	99 822
996	99 826	99 830	99 835	99 839	99 843	99 848	99 852	99 856	99 861	99 865
997	99 870	99 874	99 878	99 883	99 887	99 891	99 896	99 900	99 904	99 909
998	99 913	99 917	99 922	99 926	99 930	99 935	99 939	99 944	99 948	99 952
999	99 957	99 961	99 965	99 970	99 974	99 978	99 983	99 987	99 991	99 996
1000	00 000	00 004	00 009	00 013	00 017	00 022	00 026	00 030	00 035	00 039

Interest

DEFINITION.—Interest is expense or income resulting from the use of wealth over a period of time. It results in an increase of indebtedness or of investment according as the money or credit is borrowed or loaned. When interest is reckoned only on the original indebtedness, it is simple interest; when it is added to the principal and increases the indebtedness, it is compound interest.

COMPUTING SIMPLE INTEREST.—In computing simple interest, take the rate of 6%, which is the common rate and a factor of 12, the number of months in a year, and of 30, the number of days in a month, and make adjustments for higher or lower rates. It is customary to consider 360 days in the year, but when desirable to take the exact number of 365 days, adjustments must be made for the difference. A rate of 6% per annum is equivalent to a rate of 1% for 2 months, or, expressed as a decimal, .01. Hence, the interest on any amount at 6% for 2 months can be secured by moving the decimal point two places to the left. Interest for 6 days can be secured by moving the decimal point three places to the left, because 6 is 1/10 of 60. According to this principle the interest on $9,821.40 at 6% for

6	days is $		9.82
60	"	"	98.21
600	"	"	982.14
6,000	"	"	9,821.40

If the number of days is such that it can be separated into parts each of which is a fraction or multiple of 6, the interest may be figured by totaling the interest computed for these parts.

Illustration.—To find the interest on $847.15 for 108 days:

$ 8.472	interest	for	60	days
4.236	"	"	30	"
1.412	"	"	10	"
.847	"	"	6	"
.282	"	"	2	"
$15.249	"	"	108	"

When the principal is a factor or multiple of 6, interchange principal and days. The interest on $4,800 for 27 days is the same as the interest on $27 for 4,800 days. The interest on $27 for 60 days equals $0.27, secured by moving the decimal point two places to the left. Multiplying $0.27 by 80 gives $21.60, the interest on $27 for 4,800 days, or its equivalent, the interest on $4,800 for 27 days.

Alternative Method.—When neither of the above methods can be employed, the following rule may be applied:

Rule.—1. Secure the interest for 6 days at 6% by pointing off 3 places in the principal.

2. Multiply this result by the number of days interest is reckoned, which gives interest for six times the required number of days.

3. Divide this result by 6.

Illustration.—To find the interest on $942.52 for 19 days at 6%:

$ .94252 interest for 6 days
19

848268
94252

$17.90788 interest for 114 days

$17.90788 ÷ 6 = $2.98465 interest for 19 days

When the rate is other than 6%, the interest should be found at 6% and the amount thus found adjusted to the required rate. Thus, interest on $942.52 for 19 days at 5% is equal to 5/6 of $2.98465, the amount computed above, which gives $2.4872.

When interest has been computed on the basis of 360 days as in preceding illustrations, and it is desired to adjust it to a 365-day basis, the amount of the interest should be decreased by 1/73 of itself, because the difference of 5 days is 1/73 of 365. Thus, to find the exact interest on $942.52 for 19 days at 6%, take the amount computed on a 360-day basis shown above as $2.98465, and from this amount deduct 1/73 of itself, which leaves $2.94377 as the interest for the given time and rate on a 365-day basis.

Explanation of reason why 1/73 is subtracted from ordinary interest:

1 day's int. on 360-day basis is 1/360 of year's int.
" " " " 365-day " " 1/365 " " "
1 day's exact int.: 1 day's ordinary int. = 1/365 : 1/360
or as 1/73 : 1/72 = 1/73 × 72/1 = 72/73
or, exact int.: Ordinary int. = 72 : 73

INTEREST IN CASE OF PARTIAL PAYMENTS.—When partial payments are made on a debt, one of two rules may be followed in calculating interest.

The **Merchants' Rule** requires the calculation of interest on the principal

sum from date the debt begins to date of final settlement; also calculation of interest on each partial payment from date of payment to date of final settlement. The interest due is the difference between the interest on the principal sum to date of final settlement and the sum of the amounts of interest calculated on the partial payments as indicated above. This rule may be regarded as being sufficiently accurate on small sums and for short periods.

The **United States Rule** gives precedence to the interest due at time of each payment, and requires that each payment be applied first to liquidate interest then due. The remainder after deducting interest is applied to the reduction of the principal. If the payment is not sufficient to liquidate the interest then due, it is applied against it, but the unliquidated interest is not added to the principal, as it is in case of compound interest, but is carried forward and added to the interest which is deducted from the next payment.

Illustration.—The following example illustrates the difference between the two methods:

Jan. 1, original amount	$6,000
Feb. 1, payment	2,000
Mar. 1, "	2,000
June 1, "	1,000

Interest is charged at the rate of 6%. Required to find the amount due July 1.

Solution according to Merchants' Rule:

Interest on $6,000 for 6 mo.		$ 180.00
" " 2,000 " 5 "	$50.00	
" " 2,000 " 4 "	40.00	
" " 1,000 " 1 "	5.00	95.00
Interest due July 1		$ 85.00
Unpaid principal		1,000.00
Total due July 1		$1,085.00

Solution according to United States Rule:

Original debt		$6,000.00
Payment Feb. 1	$2,000.00	
Deduct interest on $6,000 for 1 mo.	30.00	1,970.00
		$4,030.00
Payment Mar. 1	$2,000.00	
Deduct interest on $4,030 for 1 mo.	20.15	1,979.85
		$2,050.15
Payment June 1	$1,000.00	
Deduct interest on $2,050.15 for 3 mo.	30.75	969.25
		$1,080.90
Interest on $1,080.90 for 1 mo.		5.40
Total due July 1		$1,086.30

The Merchants' Rule gives a result which is $1.30 less than the result secured by the United States Rule. The latter rule should be followed where sums are large or the period of time is considerable.

COMPOUND INTEREST.—The principles of compound interest are frequently applied in computations of bond discount and premium, sinking funds, application of depreciation methods, and the various problems of actuarial science. Compound interest as such is illegal, that is, it cannot be provided for in a negotiable instrument. Nevertheless there can be no objection to adding it to the principal at the end of an interest period and thus accomplishing the same result as if it were provided for in advance. In the computations which follow, the symbols which have become standardized in works on accounting are employed. These are as follows:

1 = the unit of value, as, \$1 or £1.
i = rate of interest per period.
n = number of periods.
a = amount of \$1 for a given time at a given rate.
I = compound interest on \$1 for a given time at a given rate.
p = present worth of \$1 for a given time at a given rate.
D = compound discount on \$1 for a given time at a given rate.
r = $(1 + i)$, periodic rate of increase.

In making compound interest computations, it is customary to compute the amount of \$1 for the given time at a given rate, and then multiply the result by the principal sum as expressed in dollars. Thus, to find the amount of \$1 for 4 years at 6% compound interest, we multiply the principal sum by the ratio of increase as many times as there are accounting periods. The ratio of increase is expressed in general terms as $(1 + i)$, 1 representing \$1 and i the rate of interest. If i is 6%, or .06, then the ratio of increase is 1.06.

Solution:

	\$1.00	
Multiplied by	1.06	
equals	\$1.06	amt. of \$1 for 1 yr. at 6%
Multiplied by	1.06	
equals	\$1.1236	" " \$1 " 2 yr. " 6%
Multiplied by	1.06	
equals	1.191016	" " \$1 " 3 yr. " 6%
Multiplied by	1.06	
equals	\$1.262477	" " \$1 " 4 yr. " 6%

Since the amount is increased each accounting period by $(1 + i)$, the process may be expressed in general terms by saying that if we start with a principal sum of 1, then the amount at the end of each succeeding year, at compound interest, will be:

1 yr. $(1 + i)$
2 " $(1 + i)^2$
3 " $(1 + i)^3$
4 " $(1 + i)^4$
5 " $(1 + i)^5$
n " $(1 + i)^n$

and the general formula for compound interest is:

$$a = (1 + i)^n$$

a being the amount of 1 for n periods of time, at i rate of interest. Thus,

to find the amount of \$125 at 6% for 18 years, compounded yearly, the amount of \$1 is found thus:

$$a = (1.06)^{18}$$

and this is multiplied by 125.

The interest may be compounded at shorter periods than 1 year. The same formula applies, but i in the formula is no longer the annual rate, but the annual rate divided by the number of periods represented by 1 year. Thus, if the rate is 6% per year and interest is compounded semiannually, i becomes .03; if interest is compounded quarterly, i becomes .015; if monthly, i becomes .005; and so on.

Thus, to find the amount of \$100 at 6% for 20 years, interest compounded quarterly, i is $6 \div 4$, or .015; and n, the number of periods, is 80. Substituting these values in the formula

$$a = (1 + i)^n$$

$$\text{we have } a = (1.015)^{80} = 3.29066$$

$$\$100 \times 3.29066 = \$329.066, \textit{ answer}$$

USE OF INTEREST TABLES, LOGARITHMS, ETC.—Interest tables are found on page 132. They show the amount of \$1 at given rates of interest for given periods of time. Having found the amount of \$1 at the given rate for the given time, the amount of the required principal for that time and rate is ascertained by multiplying it by the amount of \$1. Thus, in ascertaining the amount of \$27 in 8 years, interest at 5% compounded annually, it is found in the table on page 134, that the amount of \$1 for this time and rate is \$1.47745544, which multiplied by 27 gives \$39.891296 as the answer. When an interest table is not available, logarithms may be used to make the necessary computations. When neither logarithms nor an interest table is available, the desired power may be computed by the ordinary process of multiplication.

Illustration.—If it is desired to find the 5th power of 1.06, it may be computed as follows:

$$\begin{array}{ll}
1.06 & \\
1.06 & \\
\hline
1.1236 & = (1.06)^2 \\
1.06 & \\
\hline
1.191016 & = (1.06)^3 \\
1.06 & \\
\hline
1.26247696 & = (1.06)^4 \\
1.06 & \\
\hline
1.3382255776 & = (1.06)^5
\end{array}$$

If the full number of decimal places is carried, the computation becomes too laborious and it is therefore necessary to round off the figure at about the sixth decimal, in which case the above figure becomes

$$1.338226$$

and the computation may then be continued, the required number of decimals being dropped each time.

This procedure may be shortened, in case the number of periods is large, by multiplying, not by the ratio of increase but by some power of that ratio.

If, for example, we know the value of $(1 + i)^2$, multiplying by that amount is equivalent to multiplying by $(1 + i)$ twice; likewise, multiplying by $(1 + i)^4$ is equivalent to multiplying by $(1 + i)$ four times because $(1 + i)$ is contained four times as a factor in $(1 + i)^4$. The process is illustrated below:

$$\begin{array}{ll} 1.04 & = (1+i) \\ 1.04 & = (1+i) \\ \hline 1.0816 & = (1+i)^2 \\ 1.0816 & = (1+i)^2 \\ \hline 1.169859 & = (1+i)^4 \end{array}$$

$(1.04)^6 = (1.04)^2 \times (1.04)^4$, and other similar combinations may be made.

PRESENT WORTH—The present worth of a sum of money due at a fixed future date is that sum which, at compound interest, will amount to such sum at such date. Thus, if interest is 6%, \$1 is the present worth of \$1.06 due in 1 year. If p is the present worth of \$1 due in 1 year, then $p \times 1.06 = \$1$, or in general terms, $p \times (1 + i) = 1$. It follows that $1 \div (1 + i) = p$. Likewise, the present worth of 1 due 2 years hence, or p is

$$1 \div (1+i)^2$$

and for n periods hence is

$$1 \div (1+i)^n$$

or, $p = 1 \div (1+i)^n$

Therefore, $p = 1 \div a$

a being the amount of 1 for the given time at the given rate, compound interest.

On page 138 is shown a table of present values of \$1 for various rates and periods. The present value of a given sum due at a fixed future period at a given rate of interest, can be secured by first finding the present value of \$1 for that period and rate, and then multiplying this by the sum whose present worth it is desired to ascertain. Suppose it is desired to find the present worth of \$57 due in 15 years at 5% compound interest. The table on page 138 shows the present worth of \$1 at this rate and for this time to be \$0.48101710. The present worth of \$57 is, therefore, \$57 × .48101710 = \$27.4179747.

COMPOUND DISCOUNT.—The difference between a sum due at a fixed time in the future and its present worth is called compound discount. It may be computed by the formula

$$D = 1 - p$$

D being the compound discount and p being the present worth of 1. The present value and discount on \$1 for various periods at 6% are shown below:

Periods	Present Value	Discount
1	\$0.94339623	\$0.05660377
3	0.83961928	0.16038072
5	0.74725817	0.25274183
95	0.00294723	0.99705277

For present values at all ordinary rates and for all usual periods of time, consult the table of present values on page 138. Other formulas for finding compound discount are:

$$D = I \div (1+i)^n$$

in which i is the interest rate and n the number of periods; also,

$$D = I \div a$$

in which I is the compound interest on $1 for the given time at the given rate, and a is the amount of $1 for the given time at the given rate.

SUMMARY OF COMPOUND INTEREST PROCESSES.—The following rules and formulas are reproduced from Sprague and Perrine's "Accountancy of Investment":[5]

Rules:

1. To find the ratio of increase:
   Add 1 to the rate of interest.
2. To find the amount of $1:
   Multiply 1 by the ratio as many times as there are periods.
3. To find the present worth of $1, or to discount $1:
   Divide 1 by the ratio as many times as there are periods.
4. To find the total interest on $1:
   Subtract 1 from the amount.
5. To find the total discount on $1:
   Subtract the present worth from 1.
6. To find the amount of annuity of $1:
   Divide the total interest by the rate of interest.
7. To find the present worth of an annuity of $1:
   Divide the total discount by the rate of interest.
8. To find the rate of an annuity worth $1, or what annuity can be bought for $1:
   Divide 1 by the present worth of the annuity.
9. To find what annuity (sinking fund) will produce $1:
   Divide 1 by the amount of the annuity.
10. To find the premium on a bond, or the discount on a bond:
    Consider the difference between the cash and income rates as an annuity to be valued, and find its present worth at the income rate.
11. To find the value of a bond:
    In case the cash rate is greater than the income rate, the bond is at a premium; therefore, add par to the premium.
    In case the income rate is greater than the cash rate, the bond is at a discount; therefore, subtract the discount from par.

Formulas.—i is the rate of interest on unity for one period. n is the number of periods. c is the cash rate on a bond.

1. Ratio of increase $= 1 + i$
2. Amount $= (1 + i)^n$
3. Present worth $= \dfrac{1}{(1 + i)^n}$
4. Total interest $= (1 + i)^n - 1$
5. Total discount $= 1 - \dfrac{1}{(1 + i)^n}$
6. Amount of annuity $= \dfrac{(1 + i)^n - 1}{i}$

[5] Pp. 120–122.

7. Present worth of annuity $= \dfrac{1 - \dfrac{1}{(1+i)^n}}{i}$

8. Rent of annuity $= \dfrac{i}{1 - \dfrac{1}{(1+i)^n}}$

9. Sinking fund $= \dfrac{i}{(1+i)^n - 1}$

10. Premium on bond $= \dfrac{c-i}{i}\left(1 - \dfrac{1}{(1+i)^n}\right)$

11. Discount on bond $= \dfrac{i-c}{i}\left(1 - \dfrac{1}{(1+i)^n}\right)$

12. Value of bond (at a premium) $= 1 + \dfrac{c-i}{i}\left(1 - \dfrac{1}{(1+i)^n}\right)$

13. Value of bond (at a discount)[6] $= 1 - \dfrac{i-c}{i}\left(1 - \dfrac{1}{(1+i)^n}\right)$

Annuities

ANNUITY DEFINED.—An annuity is a series of equal payments due at regular intervals. The interval may be of any length of time—year, half-year, quarter, or month.

TWO FUNDAMENTAL PROBLEMS.—There are two fundamental problems in annuities. One is to ascertain the amount to which a series of equal payments due at regular intervals will accumulate. The other is to ascertain the investment which, with interest accumulations, will permit the withdrawal of rents of given amounts at regular intervals of time.

AMOUNT OF AN ORDINARY ANNUITY.—An ordinary annuity is one whose instalments or rents are due at the end of each period. Consequently, the last one bears no interest. The amount of an ordinary annuity of 1 per period for n periods is represented by the symbol S_n.

The **present value** of an ordinary annuity of 1 per period for n periods is represented by the symbol A_n.

Rule.—To find the amount of an ordinary annuity of 1 for a given number of periods at a given rate, divide the compound interest on 1 for the given number of periods and at the given rate by the simple interest rate. Expressed as a formula we have:

$$S_n = I \div i$$

Illustration.—The following payments are required to be made to a sinking fund at the dates indicated:

Jan. 1, 1918	$200
" 1, 1919	200
" 1, 1920	200
" 1, 1921	200
" 1, 1922	200

To what amounts will these payments accumulate at Jan. 1, 1922, if each instalment is invested at once at 4% per annum?

[6] This formula is equivalent to formula 12.

$$1.04^5 = 1.216653$$

Therefore $I = .216653$

$S_5 = .216653 \div .04 = 5.4163$, the amount of an annuity of 1 for 5 periods at 4%.

$5.4163 \times 200 =$ \$1,083.26, the amount of an annuity of 200 for 5 periods at 4%.

The manner in which this annuity accumulates is shown by following computation:

Jan. 1, 1918	Instalment	\$ 200.00
" 1, 1919	Interest at 4% on \$200.00	8.00
	Instalment	200.00
		\$ 408.00
" 1, 1920	Interest at 4% on \$408.00	16.32
	Instalment	200.00
		\$ 624.32
" 1, 1921	Interest at 4% on \$624.32	24.97
	Instalment	200.00
		\$ 849.29
" 1, 1922	Interest at 4% on \$849.29	33.97
	Instalment	200.00
	Total	\$1,083.26

On page 140 is a table which shows the amount of an annuity of \$1 at various rates of interest for various periods of time. Having found the amount of an annuity of \$1 for the given time at the given rate, the amount of an annuity for the desired sum can be found by multiplying the amount of the annuity of \$1 by such sum.

AMOUNT OF AN ANNUITY DUE.—An annuity due is one whose instalments or rents are due at the beginning of each period. Consequently, all instalments bear interest. It follows that an annuity due of a given sum, at a given rate, and for a given number of periods, will accumulate interest for a full period longer than will an ordinary annuity of the same sum, at the same rate, and for the same number of periods. This means that the excess of the amount of the annuity due will be larger than the amount of the ordinary annuity by the ratio of increase, or $1 + i$. The formula for finding the amount of an annuity due is:

$$S_n = (I \div i) \times (1 + i)$$

Consequently, the amount of an annuity due can be determined by first finding the amount of an ordinary annuity, and then multiplying this amount by the ratio of increase.

Illustration.—The following payments are required to be made to a sinking fund which is to be allowed to accumulate until 1 year after the last instalment is paid in.

Jan. 1, 1918	\$200
" 1, 1919	200
" 1, 1920	200
" 1, 1921	200
" 1, 1922	200

To what amount will these payments accumulate at Jan. 1, 1923, if each instalment is invested at once at 4% per annum? The amount of an ordinary annuity for this sum, rate, and time as found on page 142, is $1,083.26. Multiplying this sum by the ratio of increase, 1.04, gives $1,126.59 as the amount of an annuity due of $200, for 5 years, at 4%. The manner in which this annuity accumulates is shown below:

Jan. 1, 1918		$ 200.00
" 1, 1919	Interest at 4% on $200.00	8.00
	Instalment	200.00
		$ 408.00
" 1, 1920	Interest at 4% on $408.00	16.32
	Instalment	200.00
		$ 624.32
" 1, 1921	Interest at 4% on $624.32	24.97
	Instalment	200.00
		$ 849.29
" 1, 1922	Interest at 4% on $849.29	33.97
	Instalment	200.00
		$1,083.26
" 1, 1923	Interest at 4% on $1,083.26	43.33
	Total	$1,126.59

SINKING FUNDS.—When sinking funds are accumulated by periodical contributions, the problem is to find what sum invested periodically will accumulate to the required amount, at a given rate of interest, and over a given number of periods. This periodical contribution is determined by finding the amount of an annuity of $1 for the given number of periods at the given rate of interest, and then dividing the amount of the required fund by the amount of an annuity of $1. Periodical contributions to sinking funds are usually deposited at the end of the period; consequently the divisor employed is the amount of an ordinary annuity of $1. If S. F. represents the sinking fund to be established and if S. F. C. represents the periodical contribution to be made to the sinking fund, then

$$\text{S. F. C.} = \text{S. F.} \div S_n$$

S_n being the amount of an ordinary annuity of $1.

Illustration.—A company desires to accumulate a fund of $50,000 in 6 years. If money put into the fund accumulates at the rate of 4% per annum, what must be the amount of each yearly contribution, the first being made at end of the 1st year?

From the table on page 142, we find that the amount of an ordinary annuity of $1 for 6 periods at 4% is $6.632975. Therefore,

$$\begin{aligned}\text{S. F. C.} &= \$50{,}000 \div 6.632975 \\ &= \$7{,}538.10\end{aligned}$$

The manner in which this annuity accumulates to the required amount is shown in the following table:

End of 1st year:		
Instalment		$ 7,538.10
End of 2nd year:		
Interest on $7,538.10 at 4%	$ 301.52	
Instalment	7,538.10	7,839.62
		$15,377.72
End of 3rd year:		
Interest on $15,377.72 at 4%	$ 615.12	
Instalment	7,538.10	8,153.22
		$23,530.94
End of 4th year:		
Interest on $23,530.94 at 4%	$ 941.24	
Instalment	7,538.10	8,479.34
		$32,010.28
End of 5th year:		
Interest on $32,010.28 at 4%	$1,280.41	
Instalment	7,538.10	8,818.51
		$40,828.79
End of 6th year:		
Interest on $40,828.79 at 4%	$1,633.15	
Instalment	7,538.10	9,171.25
		$50,000.04

If the contributions are to be made to the sinking fund at the beginning of each period, the amount which is to be accumulated should be divided by the amount, not of an ordinary annuity, but of an annuity due. Thus, in the preceding illustration, if the deposits are to be made to the sinking fund at the beginning of each of the 6 years during which it accumulates, in order to find the amount of each contribution we must divide 50,000, not by 6.632975, but by $6.632975 \times 1.04 = 6.898294$. $50{,}000 \div 6.898294 =$ $7,248.17.

The manner in which the sinking fund will then accumulate is shown below·

1st year:		
Beginning:	Instalment	$ 7,248.17
End:	Interest on $7,248.17 at 4%	289.93
		$ 7,538.10
2nd year:		
Beginning·	Instalment	7,248.17
		$14,786.27
End:	Interest on $14,786.27 at 4%	591.45
		$15,377.72

3rd year:			
Beginning:	Instalment		7,248.17
			$22,625.89
End:	Interest on $22,625.89 at 4%		905.04
			$23,530.93
4th year:			
Beginning:	Instalment		7,248.17
			$30,779.10
End:	Interest on $30,779.10 at 4%		1,231.16
			$32,010.26
5th year:			
Beginning:	Instalment		7,248.17
			$39,258.43
End:	Interest on $39,258.43 at 4%		1,570.34
			$40,828.77
6th year:			
Beginning:	Instalment		7,248.17
			$48,076.94
End:	Interest on $48,076.94 at 4%		1,923.07
	Total		$50,000.01

Sometimes the interest on the sinking fund is compounded more frequently than the contributions are made to it. Thus, the contributions may be made yearly, whereas the interest may be compounded semiannually, quarterly, or monthly. Under these conditions it must be remembered that the nominal and effective rates are different.

Illustration.—A company establishes a sinking fund by contributing to it annually $200, payable at the end of the year. To what sum will these accumulate if they are invested at 4% and the interest is compounded semiannually?

Here the rate is not 4% per annum, but 2% per half-year; therefore the ratio of increase is 1.02 each 6 months, or 1.02^2 per annum. $1.02^2 = 1.0404$ the ratio of increase per annum. The effective yearly interest rate is, therefore, 1.0404%.

The amount of $1 in 4 years at 2% a half-year is $1.02^8 = \$1.171659$. The compound interest is $0.171659. To find the amount of an annuity of $1, divide the compound interest, $0.171659, by the effective interest rate, .0404, which gives as a result $4.249. Therefore, the amount of an annuity of $200 = 200 × 4.249 = $849.80. The manner in which this accumulation takes place is shown in the following computations:

1st year:			
End:	Instalment		$200.00
2nd year:			
Middle:	Interest on $200.00	$ 4.00	
End:	" " 204.00	4.08	8.08
	Instalment		200.00
			$408.08

3rd year:			
Middle: Interest on $408.08	$ 8.16		
End: " " 416.24	8.32	16.48	
Instalment		200.00	
		$624.56	
4th year:			
Middle: Interest on $624.56	$12.49		
End: " " 637.05	12.74	25.23	
Instalment		200.00	
Total		$849.79	

Should the instalments be made payable at the beginning of each year instead of at the end, the amount is computed as above and then multiplied by the ratio of increase. Thus, in the above illustration the ratio of increase is 1.0404, and to find the amount of the annuity if the instalments are payable at the beginning of each year, $849.79 is multiplied by 1.0404 = $884.12.

PRESENT WORTH OF AN ANNUITY.—It is sometimes necessary to find what sum invested and allowed to accumulate at compound interest will produce a certain number of rents of a given amount and to be withdrawn from the fund at given intervals of time. The amount in the fund at the time the last rent is payable should be exactly sufficient to provide for its payment.

Illustration.—A concern wishes to invest a sum of money on Jan. 1, 1922, which, accumulating at the rate of 4% per annum, will just enable it to make four payments of $200 each on Jan. 1, 1923, Jan. 1, 1924, Jan. 1, 1925, and Jan. 1, 1926, respectively. The following rule should be followed:

To determine the present value of an annuity of 1 for a given number of periods at a given rate of interest, divide the compound discount on 1 for the given number of periods by the given interest rate. If A_n represents such present value, then

$$A_n = D \div i$$

D being the compound discount and i the interest rate.

From the table on page 138, it is found that the present value of 1 at 4% due 4 periods hence is .854804. The compound discount is $1 - .854804 = .145196$. Dividing .145196 by .04, the rate of interest, gives 3.6299 as the present value of an annuity of 1 for 4 periods at 4%. $3.6299 \times \$200 = \$725.98$, the present value of an annuity of $200 for 4 years at 4%. The manner in which this accumulation and reduction takes place is shown below:

Jan. 1, 1922 Investment (present value)	$725.98
" " 1923 Interest on $725.98 at 4%	29.04
	$755.02
Payment deducted	200.00
	$555.02
" " 1924 Interest on $555.02 at 4%	22.20
	$577.22
Payment deducted	200.00
	$377.22

Jan. 1, 1925	Interest on $377.22 at 4%	15.09
		$392.31
	Payment deducted	200.00
		$192.31
" " 1926	Interest on $192.31 at 4%	7.69
		$200.00
	Payment deducted	200.00
		$ 0.00

PRESENT WORTH OF AN ANNUITY DUE.—When the payments are to be made at the beginning instead of the end of each period, the invested sum draws no interest before the first rent is deducted. The present worth of an annuity due can be determined by multiplying the present value of an ordinary annuity for the same number of payments and at the same rate of interest by the ratio of increase, $1+i$. Thus, in the illustration of the present worth of an ordinary annuity on page 124, we have $725.98 given as the present value. The ratio of increase is 1.04. Multiplying 725.98 by 1.04 gives $755.02 as the present value of an annuity due of $200 payable in 4 annual instalments of $200 each. The manner in which this sum accumulates and is reduced by the 4 yearly payments is shown below:

Jan. 1, 1922	Investment (present value)	$755.02
	Payment deducted	200.00
		$555.02
Jan. 1, 1923	Interest on balance, $555.02 at 4%	22.20
		$577.22
	Payment deducted	200.00
		$377.22
Jan. 1, 1924	Interest on balance, $377.22 at 4%	15.19
		$392.41
	Payment deducted	200.00
		$192.41
Jan. 1, 1925	Interest on balance, $192.41, at 4%	7.70
		$200.11
	Payment deducted	200.00
		$ .11

DEFERRED ANNUITIES.—It is sometimes desired to find the present value of an annuity which will not begin to run until after several periods

have elapsed. Thus, an annuity of 4 payments deferred 8 periods does not begin to run until 8 periods have expired.

Illustration.—In the illustration given on page 124, it is shown that the present value of an ordinary annuity of $200, due in 4 payments at 4% per year, is $725.98. What is the present value of such an annuity if it is deferred 8 years, that is, if the first annuity payment is made 9 years from the date on which the sum representing the present worth is invested?

Since the annuity is deferred 8 years, the investment will earn interest for 8 years before the annuity begins to run. If $725.98 invested at the beginning of the 9th year will produce the required annuity, the investment at the beginning of the 1st year is the present worth of $725.98 due at the end of 8 years. The present value of 1 due in 8 periods at 4% is 0.730690 as per table on page 138; therefore the present value of $725.98 is $\$725.98 \times 0.730690 = \$530.47$, which amount, invested at compound interest will amount to $725.98 in 8 years, because $1.04^8 = 1.368569$ and $\$530.47 \times 1.368569 = \$725.98$.

PRICE OF BONDS.—Various factors combine to determine the selling price of a bond. These are: the financial status of the issuing company, the condition of the money market, the security, the interest rate, and so on. Bonds usually sell either at a discount or at a premium, and when such is the case the effective interest rate differs from the nominal rate. When a bond is sold below par, i.e., at a discount, the sum received is less than par, so that the effective interest rate is higher than the nominal interest rate. If, on the other hand, the bond sells above par, i.e., at a premium, the sum received by the seller is greater than the par value of the bond, so that the effective interest rate realized by the purchaser is less than the nominal interest rate.

When bond quotations are made "on a basis," the effective rate to be earned is stated. Given this and the nominal rate, the price may be computed from a bond table. From the following table we find that a 5-year 6% bond bought on a 5% basis costs $104.38, and that a 5-year 7% $100 bond bought on a 5% basis costs $108.75.

Bond Table

Five Years—Interest payable semiannually

Per Cent per Annum	3%	3½%	4%	4½%	5%	6%	7%
4.75	92.29	94.49	96.70	98.90	101.10	105.51	109.91
4.80	92.08	94.28	96.48	98.68	100.88	105.28	109.58
4.875	91.77	93.96	96.10	98.35	100.55	104.94	109.33
4.90	91.66	93.86	96.05	98.25	100.44	104.83	109.31
5.00	91.25	93.44	95.62	97.81	100.00	104.38	108.75
5.10	90.83	93.02	95.20	97.38	99.56	103.93	108.29
5.125	90.73	92.91	95.09	97.27	99.45	103.82	108.18
5.20	90.42	92.60	94.78	96.95	99 13	103.48	107.84
5.25	90.22	92.39	94.57	96.74	98.91	103.26	107.61
5.30	90.01	92.18	94.35	96.53	98.70	103.04	107.38
5.375	89.71	91.87	94.04	96.21	98.37	102.71	107.04
5.40	89.61	91.77	93.94	96.10	98.27	102.60	106.93
5.50	89 20	91.36	93.52	95.68	97.84	102.16	106.48
5.625	88.70	90.85	93.00	95.16	97.31	101.61	105.92
5.75	88.20	90 34	92.49	94.62	96.78	101.07	105.37
5.875	87.70	89.84	91.98	94.12	96.26	100.53	104.81
6.00	87.20	89.34	91.47	93.60	95.73	100.00	104.27

Several bond tables are published giving prices for all usual terms and rates. See additional illustration on page 162.

COMPUTING BOND PREMIUM.—When the effective interest rate is lower than the nominal rate, the premium is computed by a method illustrated below:

If the par value is $1,000, the term 5 years, the nominal rate 6% payable semiannually, and the bond is to be bought on a 5% basis, the buyer is to receive a return of 5% per annum. If it bore coupons of 2½% each payable each 6 months, the bond would be bought at par. But the coupons are $30 each, and this extra $5 each 6 months is an annuity for which the buyer pays the present value discounted at the effective interest rate of 2½% per period, determined thus:

.781198 = present value of 1 at 2½% for 10 periods.
.218802 ÷ .025 = 8.75208 present value of annuity of 1.
8.75208 × 5 = 43.76040 present value of annuity of 5, the premium.
Therefore the basis price to be paid is $1,043.76.

COMPUTING BOND DISCOUNT.—The discount on a bond may be computed by finding the difference between the interest on par at the effective rate and the nominal rate, and then finding the present value of an annuity for the number of interest periods, each rent of which is the difference in the interest at the two rates. This is done by discounting the annuity at the effective interest rate.

Illustration.—Assume a $1,000 5-year 5% bond which is to be sold to net the investor 6%, interest being payable semiannually.

Effective rate is 3% on $1,000 = $30
Nominal rate is 2½% on $1,000 = 25

Difference = $ 5

Present value of 1 at 3% due in 10 periods = .744094
Compound discount = .255906
Present value of annuity of 1 = .255906 ÷ .03 = 8.5302
5 × 8.5302 = 42.6510, the discount
1,000 − 42.65 = 957.35, the price

LEGAL INTEREST RATES.—The following table gives the statutory provisions of the various states regarding interest rates.

Legal Rate of Interest Table

	%		%
Alabama	8		
Arizona	6	Parties may agree on any rate not exceeding	10
Arkansas	6	" " " " " " " "	10
California	7	" " " " " " " "	12
Colorado	8	Parties may agree on any rate not exceeding 12% per annum if the principal is not over $300. Parties may agree on any rate on larger loans.	
Connecticut	6	Loans at greater rate than 12% prohibited except that pawnbrokers may charge special rates.	
Delaware	6	Parties may agree in writing on any rate where loan exceeds $5,000 on accepted collateral security. Vol. 28, Laws of Delaware, p. 632.	

Legal Rate of Interest Table—Continued

	%		%
Dist. of Columbia	6	Parties may agree in writing on any rate not exceeding	8
Florida	8	" " " " " " " " " "	10
Georgia	7	" " " " " " " " " "	8
Idaho	7	" " " " " " " " " "	10
		Parties may agree in writing for the payment of compound interest if the rate of interest on interest does not exceed the maximum allowed by law (10%) and the aggregate of the interest and compound interest does not exceed such maximum rate on the principal.	
Illinois	5	Parties may agree on any rate not exceeding	7
Indiana	6	" " " " " " " "	8
Iowa	6	" " " " " " " "	8
Kansas	6	" " " " " " " "	10
Kentucky	6		
Louisiana	5	Parties may agree on any rate not exceeding	8
Maine	6	Parties may agree on any rate.	
Maryland	6	3½% per month on petty loans of $300 or less made by specially licensed loan agencies.†	
Massachusetts	6	Parties may agree on any rate.	
Michigan	5	" " " " " " not exceeding	7
Minnesota	6	" " " " " " " "	10
Mississippi	6	" " " " " " " "	8
Missouri	6	" " " " " " " "	8
Montana	8	" " " " " " " "	10
Nebraska	7	" " " " " " " "	10
*Nevada	7	" " " " " " " "	12
New Hampshire	6		
New Jersey	6		
New Mexico	6	Parties may agree on any rate not exceeding	10
		Where there is no collateral security for loan	12
New York	6	Special exceptions in favor of call loans in amounts over $5,000; and in favor of bankers.†	
North Carolina	6		
North Dakota	6	Parties may agree on any rate not exceeding	10
		Rate shall be same after maturity of indebtedness as before maturity. Attempted increase void.	
Ohio	6	Parties may agree on any rate not exceeding	8
Oklahoma	6	" " " " " " " "	10
Oregon	6	" " " " " " " "	10
Pennsylvania	6	Special provisions licensed money lenders.	
Rhode Island	6	Parties may agree on any rate not exceeding	30
South Carolina	7	" " " " " " " "	8
South Dakota	7	" " " " " " " "	10
Tennessee	6	" " " " " " " "	8
Texas	6	" " " " " " " "	10
Utah	8	" " " " " " " "	12
Vermont	6		
Virginia	6	Bankers, brokers and moneyed corporations may loan money or discount at not exceeding ½ of 1% for 30 days, minimum fee 50c. Exceptions in favor of insurance companies loaning money at 6% on insurance policies.	
Washington	6	Parties may agree on any rate not exceeding	12
West Virginia	6		
Wisconsin	6	Parties may agree on any rate not exceeding	10
Wyoming	8	" " " " " " " "	12

N.B.—In states where parties may agree on higher than legal rate, it is not sufficient to print on invoice such words "interest at rate of 1 per cent a month charged on past due accounts," for a contract is not created thereby.

* Where there is no express contract in writing regulating the rate of interest, the legal rate is 7% upon all claims except book accounts, and interest runs from the time the debt became due. In the case of book accounts interest commences to run from the day the accounts are settled and the balance ascertained.

† Corporations are precluded in Maryland and New York from setting up usury as a defense.

Exact Interest at 5% for Times from 1 to 360 Days
(Based on 365 days to the year)

$$I = Pi\frac{d}{365}$$

Days	$1,000	$2,000	$3,000	$4,000	$5,000	$6,000	$7,000	$8,000	$9,000
1	0.1370	0.2740	0.4110	0.5749	0.6849	0.8219	0.9589	1.0959	1.2329
2	0.2740	0.5479	0.8219	1.0959	1.3699	1.6438	1.9178	2.1918	2.4658
3	0.4110	0.8219	1.2329	1.6438	2.0548	2.4657	2.8767	3.2877	3.6986
4	0.5479	1.0959	1.6438	2.1918	2.7397	3.2877	3.8356	4.3836	4.9315
5	0.6849	1.3699	2.0548	2.7397	3.4247	4.1096	4.7945	5.4795	6.1644
6	0.8219	1.6438	2.4658	3.2877	4.1096	4.9315	5.7534	6.5753	7.3973
7	0.9589	1.9178	2.8767	3.8356	4.7945	5.7534	6.7123	7.6712	8.6301
8	1.0959	2.1918	3.2877	4.3836	5.4795	6.5753	7.6712	8.7671	9.8630
9	1.2329	2.4658	3.6986	4.9315	6.1644	7.3973	8.6301	9.8630	11.0959
10	1.3699	2.7397	4.1096	5.4795	6.8493	8.2192	9.5890	10.9589	12.3288
20	2.7397	5.4795	8.2192	10.9589	13.6986	16.4384	19.1781	21.9178	24.6575
30	4.1096	8.2192	12.3288	16.4384	20.5479	24.6575	28.7671	32.8767	36.9863
40	5.4795	10.9589	16.4384	21.9178	27.3973	32.8767	38.3562	43.8356	49.3151
50	6.8493	13.6986	20.5479	27.3973	34.2466	41.0959	47.9452	54.7945	61.6438
60	8.2192	16.4384	24.6575	32.8767	41.0959	49.3151	57.5342	65.7534	73.9761
70	9.5890	19.1781	28.7671	38.3562	47.9452	57.5342	67.1233	76.7123	86.3042
80	10.9589	21.9178	32.8767	43.8356	54.7945	65.7334	76.7123	87.6712	98.6301
90	12.3288	24.6575	36.9863	49.3151	61.6438	73.9726	86.3014	98.6301	110.9589
100	13.6986	27.3973	41.0959	54.7945	68.4931	82.1918	95.8904	109.5890	123.2877
110	15.0685	30.1370	45.2055	60.2740	75.3425	90.4110	105.4795	120.5479	135.6164
120	16.4384	32.8767	49.3151	65.7534	82.1918	98.6301	115.0685	131.5068	147.9452
130	17.8082	35.6164	53.4247	71.2329	89.0411	106.8493	124.6575	142.4658	160.2740
140	19.1781	38.3562	57.5342	76.7123	95.8904	115.0685	134.2466	153.4247	172.6027
150	20.5479	41.0959	61.6438	82.1918	102.7397	123.2877	143.8356	164.3836	184.9315
160	21.9178	43.8356	65.7534	87.6712	109.5890	131.5068	153.4247	175.3425	197.2603
170	23.2877	46.5753	69.8630	93.1507	116.4384	139.7260	163.0137	180.3014	209.5890
180	24.6575	49.3151	73.9726	98.6301	123.2877	147.9452	172.6027	197.2603	221.9178
190	26.0274	52.0548	78.0822	104.1096	130.1370	156.1644	182.1918	208.2192	234.2466
200	27.3973	54.7945	82.1918	109.5890	136.9863	164.3836	191.7808	219.1781	246.5753
210	28.7671	57.5342	86.3014	115.0685	143.8356	172.6027	201.3699	230.1370	258.9041
220	30.1370	60.2740	90.4110	120.5479	150.6849	180.8219	210.9589	241.0959	271.2329
230	31.5068	63.0137	94.5205	126.0274	157.5342	189.0411	220.5479	252.0548	283.5616
240	32.8767	65.7534	98.6301	131.5068	164.3836	197.2603	230.1370	263.0137	295.8904
250	34.2466	68.4932	102.7397	136.9863	171.2329	205.4795	239.7260	273.9726	308.2192
260	35.6164	71.2329	106.8493	142.4658	178.0822	213.6986	249.3151	284.9315	320.5479
270	36.9863	73.9726	110.9589	147.9452	184.9315	221.9178	258.9041	295.8904	332.8767
280	38.3562	76.7123	115.0685	153.4247	191.7808	230.1370	268.4932	306.8493	345.2055
290	39.7260	79.4521	119.1781	158.9041	198.6301	238.3562	278.0822	317.8082	357.5342
300	41.0959	82.1918	123.2877	164.3836	205.4795	246.5753	287.6712	328.7671	369.8630
310	42.4658	84.9315	127.3973	169.8630	212.3288	254.7945	297.2603	339.7260	382.1918
320	43.8356	87.6712	131.5068	175.3425	219.1781	263.0137	306.8493	350.6849	394.5205
330	45.2055	90.4110	135.6164	180.8219	226.0274	271.2329	316.4384	361.6438	406.8493
340	46.5753	93.1507	139.7260	186.3014	232.8767	279.4521	326.0274	372.6027	419.1781
350	47.9452	95.8904	143.8356	191.7808	239.7260	287.6712	335.6164	383.5616	431.5068
360	49.3151	98.6301	147.9452	197.2603	246.5753	295.8904	345.2055	394.5205	443.8356

Five Per Cent Interest Table

	Time	$1	$2	$3	$4	$5	$6	$7	$8	$9	$10	$20	$30	$40	$50	$100	$1,000
DAYS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	14
	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	3	28
	3	0	0	0	0	0	0	0	0	0	0	1	1	2	2	4	42
	4	0	0	0	0	0	0	0	0	1	1	1	2	2	3	6	56
	5	0	0	0	0	0	0	0	1	1	1	1	2	3	3	7	69
	6	0	0	0	0	0	1	1	1	1	1	2	3	3	4	8	83
	7	0	0	0	0	0	1	1	1	1	1	2	3	4	5	10	97
	8	0	0	0	0	1	1	1	1	1	1	2	3	4	6	11	1.11
	9	0	0	0	1	1	1	1	1	1	1	3	4	5	6	13	1.25
	10	0	0	0	1	1	1	1	1	1	1	3	4	6	7	14	1.39
	15	0	0	1	1	1	1	1	2	2	2	4	6	8	10	21	2.08
	20	0	1	1	1	1	2	2	2	3	3	6	8	11	14	28	2.78
	25	0	1	1	1	2	2	2	3	3	3	7	10	14	17	35	3.47
	30	0	1	1	2	2	3	3	3	4	4	8	13	17	21	42	4.17
	33	0	1	1	2	2	3	3	4	4	5	9	14	19	23	46	4.59
	63	1	2	3	4	4	5	6	7	8	9	18	26	35	44	88	8.75
	93	1	3	4	5	6	8	9	10	12	13	26	39	52	65	1.29	12.92
MONTHS	1	0	1	1	2	2	3	3	3	4	4	8	13	17	21	42	4.17
	2	1	2	3	3	4	5	6	7	8	8	17	25	33	42	83	8.33
	3	1	3	4	5	6	8	9	10	11	13	25	38	50	63	1.25	12.50
	4	2	3	5	7	8	10	12	13	15	17	33	50	67	83	1.67	16.67
	5	2	4	6	8	10	13	15	17	19	21	42	63	83	1.04	2.08	20.83
	6	3	5	8	10	13	15	18	20	23	25	50	75	1.00	1.25	2.50	25.00
	7	3	6	9	12	15	18	20	23	26	29	58	88	1.17	1.46	2.92	29.17
	8	3	7	10	13	17	20	23	27	30	33	67	1.00	1.33	1.67	3.33	33.33
	9	4	8	11	15	19	23	26	30	34	38	75	1.13	1.50	1.88	3.25	37.50
	10	4	8	13	17	21	25	29	33	38	42	83	1.25	1.67	2.08	4.17	41.67
	11	5	9	14	18	23	28	32	37	41	46	92	1.38	1.83	2.29	4.58	45.83
	12	5	10	15	20	25	30	35	40	45	50	1.00	1.50	2.00	2.50	5.00	50.00

The Number of Each Day of the Year Counting from Jan. 1

Day of Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349

NOTE.—For leap years the number of the day is one greater than the tabular number after Feb. 28.

Six Per Cent Interest Table

	Time	$1	$2	$3	$4	$5	$6	$7	$8	$9	$10	$20	$30	$40	$50	$100	$1,000
DAYS	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	17
	2	0	0	0	0	0	0	0	0	0	0	1	1	1	2	3	38
	3	0	0	0	0	0	0	0	0	0	1	1	2	2	3	5	50
	4	0	0	0	0	0	0	0	1	1	1	1	2	3	3	7	67
	5	0	0	0	0	0	1	1	1	1	1	2	3	3	4	8	83
	6	0	0	0	0	1	1	1	1	1	1	2	3	4	5	10	1.00
	7	0	0	0	0	1	1	1	1	1	1	2	4	5	6	12	1.17
	8	0	0	0	1	1	1	1	1	1	1	3	4	5	7	13	1.33
	9	0	0	0	1	1	1	1	1	1	2	3	5	6	8	15	1.50
	10	0	0	1	1	1	1	1	1	2	2	3	5	7	8	17	1.67
	15	0	1	1	1	1	2	2	2	2	3	5	8	10	13	25	2.50
	20	0	1	1	1	2	2	2	3	3	3	7	10	13	17	33	3.33
	25	0	1	1	2	2	2	3	3	4	4	8	13	17	21	42	4.17
	30	1	1	2	2	3	3	4	4	5	5	10	15	20	25	50	5.00
	33	1	1	2	2	3	3	4	4	5	6	11	17	22	28	55	5.50
	63	1	2	3	4	5	6	7	8	9	11	21	32	42	53	1.05	10.50
	93	2	3	5	6	8	9	11	12	14	16	31	47	62	78	1.55	15.50
MONTHS	1	1	1	2	2	3	3	4	4	5	5	10	15	20	25	50	5.00
	2	1	2	3	4	5	6	7	8	9	10	20	30	40	50	1.00	10.00
	3	2	3	5	6	8	9	11	12	14	15	30	45	60	75	1.50	15.00
	4	2	4	6	8	10	12	14	16	18	20	40	60	80	1.00	2.00	20.00
	5	3	5	8	10	13	15	18	20	23	25	50	75	1.00	1.25	2.50	25.00
	6	3	6	9	12	15	18	21	24	27	30	60	90	1.20	1.50	3.00	30.00
	7	4	7	11	14	18	21	25	28	32	35	70	1.05	1.40	1.75	3.50	35.00
	8	4	8	12	18	20	24	28	32	36	40	80	1.20	1.60	2.00	4.00	40.00
	9	5	9	14	18	23	7	32	36	41	45	90	1.35	1.80	2.25	4.50	45.00
	10	5	10	15	20	25	30	35	40	45	50	1.00	1.50	2.00	2.50	5.00	50.00
	11	6	11	17	22	28	33	39	44	50	55	1.10	1.65	2.20	2.75	5.50	55.00
	12	6	12	18	24	30	36	42	48	54	60	1.20	1.80	2.40	3.00	6.00	60.00

The Number of Each Day of the Year Counting from Jan. 1—Continued.

Day of Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	208	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29		88	119	149	180	210	241	272	302	333	363
30	30		89	120	150	181	211	242	273	303	334	364
31	31		90		151		212	243		304		365

COMPOUND INTEREST AND OTHER COMPUTATIONS[7]

Amount of $1 at Compound Interest

Periods	1%	1¼%	1½%	1¾%	2%	2¼%	2½%
0	1.	1.	1.	1.	1.	1.	1.
1	1.01	1.0125	1.015	1.0175	1.02	1.0225	1.025
2	1.0201	1.02515625	1.030225	1.03530625	1.0404	1.04550625	1.050625
3	1.030301	1.03797070	1.04567838	1.05342411	1.061208	1.06903014	1.07689063
4	1.04060401	1.05094534	1.06136355	1.07185903	1.08243216	1.09308332	1.10381289
5	1.05101005	1.06408215	1.07728400	1.09061656	1.10408080	1.11767769	1.13140821
6	1.06152015	1.07738318	1.09344326	1.10970235	1.12616242	1.14282544	1.15969342
7	1.07213535	1.09085047	1.10984491	1.12912215	1.14868567	1.16853901	1.18868575
8	1.08285671	1.10448610	1.12649259	1.14888178	1.17165938	1.19483114	1.21840290
9	1.09368527	1.11829218	1.14338998	1.16898721	1.19509257	1.22171484	1.24886297
10	1.10462213	1.13227083	1.16054083	1.18944449	1.21899442	1.24920343	1.28008454
11	1.11566835	1.14642422	1.17794894	1.21025977	1.24337431	1.27731050	1.31208666
12	1.12682503	1.16075452	1.19561817	1.23143931	1.26824179	1.30604999	1.34488882
13	1.13809328	1.17526395	1.21355244	1.25298950	1.29360663	1.33543611	1.37851104
14	1.14947421	1.18995475	1.23175573	1.27491682	1.31947876	1.36548343	1.41297382
15	1.16096896	1.20482918	1.25023207	1.29722786	1.34586834	1.39620680	1.44829817
16	1.17257864	1.21988955	1.26898555	1.31992935	1.37278571	1.42762146	1.48450562
17	1.18430443	1.23513817	1.28802033	1.34302811	1.40024142	1.45974294	1.52161826
18	1.19614748	1.25057739	1.30734064	1.36653111	1.42824625	1.49258716	1.55965872
19	1.20810895	1.26620961	1.32695075	1.39044540	1.45681117	1.52617037	1.59865019
20	1.22019004	1.28203723	1 34685501	1.41477820	1.48594740	1.56050920	1.63861644
21	1.23239194	1.29806270	1.36705783	1.43953681	1.51566634	1.59562066	1.67958185
22	1.24471586	1.31428848	1.38756370	1.46472871	1.54597967	1.63152212	1.72157140
23	1.25716302	1.33071709	1.40837715	1.49036146	1.57689926	1.66823137	1.76461068
24	1.26973465	1.34735105	1.42950281	1.51644279	1.60843725	1.70576658	1.80872595
25	1.28243200	1.36419294	1.45094535	1.54298054	1.64060599	1.74414632	1.85394410
26	1.29525631	1.38124535	1.47270953	1.56998269	1.67341811	1.78338962	1.90029270
27	1.30820888	1.39851092	1.49480018	1.59745739	1.70688648	1.82351588	1.94780002
28	1.32129097	1.41599230	1.51722218	1.62541290	1.74102421	1.86454499	1.99649502
29	1.33450388	1.43369221	1.53998051	1.65385762	1.77584469	1.90649725	2.04640739

30	1.34784892	1.45161336	1.56308022	1.68280013	1.81136158	1.94939344	2.09756758
31	1.36132740	1.46975853	1.58652642	1.71224913	1.84758882	1.99325479	2.15000677
32	1.37494068	1.44813051	1.61032432	1.74221349	1.88454059	2.03810303	2.20375694
33	1.38869009	1.50673214	1.63447918	1.77270223	1.92223140	2.08396034	2.25885086
34	1.40257699	1.52556629	1.65899637	1.80372452	1.96067603	2.13084945	2.31532213
35	1.41660276	1.54463587	1.68388132	1.83528970	1.99988955	2.17879356	2.37320519
36	1.43076878	1.56394382	1.70913954	1.86740727	2.03988734	2.22781642	2.43253532
37	1.44507647	1.58349312	1.73477663	1.90008689	2.08068509	2.27794229	2.49334870
38	1.45952724	1.60328678	1.76079828	1.93333841	2.12229879	2.32919599	2.55568242
39	1.47412251	1.62332787	1.78721025	1.96717184	2.16474477	2.38160290	2.61957448
40	1.48886373	1.64361946	1.81401841	2.00159734	2.20803966	2.43518897	2.68506384
41	1.50375237	1.66416471	1.84122868	2.03662530	2.25220046	2.48998072	2.75219043
42	1.51878989	1.68496677	1.86884712	2.07226624	2.29724447	2.54600528	2.82099520
43	1.53397779	1.70602885	1.89687982	2.10853090	2.34318936	2.60329040	2.89152008
44	1.54931757	1.72735421	1.92533302	2.14543019	2.39005314	2.66186444	2.96380808
45	1.56481075	1.74894614	1.95421301	2.18297522	2.43785421	2.72175639	3.03790328
46	1.58045885	1.77080797	1.98352621	2.22117728	2.48661129	2.78299590	3.11385086
47	1.59626344	1.79294306	2.01327910	2.26004789	2.53634351	2.84561331	3.19169713
48	1.61222608	1.81535485	2.04347829	2.29959872	2.58707039	2.90963961	3.27148956
49	1.62834834	1.83804679	2.07413046	2.33984170	2.63881179	2.97510650	3.35327680
50	1.64463182	1.86102237	2.10524242	2.38078893	2.69158803	3.04204640	3.43710872
55	1.72852457	1.98028070	2.26794398	2.59652785	2.97173067	3.40002740	3.88877303
60	1.81669670	2.10718135	2.44321978	2.83181628	3.28103079	3.80013479	4.39978975
65	1.90936649	2.24221407	2.63204158	3.08842574	3.62252311	4.24732588	4.97795826
70	2.00676337	2.38589997	2.83545629	3.36828827	3.99955822	4.74714140	5.63210286
75	2.10912847	2.53879358	3.05459171	3.67351098	4.41583546	5.30577405	6.37220743
80	2.21671522	2.70148494	3.29066279	4.00639192	4.87543916	5.93014530	7.20956782
85	2.32978997	2.87460191	3.54497838	4.36943740	5.38287878	6.62799112	8.15696424
90	2.44863267	3.05881260	3.81894851	4.76538080	5.94313313	7.40795782	9.22885633
95	2.57353755	3.25482789	4.11409214	5.19720324	6.56169920	8.27970921	10.44160385
100	2.70481383	3.46340427	4 43204565	5.66815594	7.24464612	9.25404630	11.81371635

C. E. Sprague and L. L. Perrine, The Accountancy of Investment, 1914, pp. 336-351.

Amount of $1 at Compound Interest—Continued

Periods	2¾%	3%	3½%	4%	4½%	5%	6%
0	1.	1.	1.	1.	1.	1.	1.
1	1.0275	1.03	1.035	1.04	1.045	1.05	1.06
2	1.05575625	1.0609	1.071225	1.0816	1.092025	1.1025	1.1236
3	1.08478955	1.092727	1.10871788	1.124864	1.14116613	1.157625	1.191016
4	1.11462126	1.12550881	1.14752300	1.16985856	1.19251860	1.21550625	1.26247696
5	1.14527334	1.15927407	1.18768631	1.21665290	1.24618194	1.27628156	1.33822558
6	1.17676836	1.19405230	1.22925533	1.26531902	1.30226012	1.34009564	1.41851911
7	1.20912949	1.22987387	1.27227926	1.31593178	1.36086183	1.40710042	1.50363026
8	1.24238055	1.26677008	1.31680904	1.36856905	1.42210061	1.47745544	1.59384807
9	1.27654602	1.30477318	1.36289735	1.42331181	1.48609514	1.55132822	1.68947896
10	1.31165103	1.34391638	1.41059876	1.48024428	1.55296942	1.62889463	1.79084770
11	1.34772144	1.38423387	1.45996972	1.53945406	1.62285305	1.71033936	1.89829856
12	1.38478378	1.42576089	1.51106866	1.60103222	1.69588143	1.79585633	2.01219647
13	1.42286533	1.46853371	1.56395606	1.66507351	1.77219610	1.88564914	2.13292826
14	1.46199413	1.51258972	1.61869452	1.73167645	1.85194492	1.97993160	2.26090396
15	1.50219896	1.55796742	1.67534883	1.80094351	1.93528244	2.07892818	2.39655819
16	1.54350944	1.60470644	1.73398604	1.87298125	2.02237015	2.18287459	2.54035168
17	1.58595595	1.65284763	1.79467555	1.94790050	2.11337681	2.29201832	2.69277279
18	1.62956973	1.70243306	1.85748920	2.02581652	2.20847877	2.40661923	2.85433915
19	1.67438290	1.75350605	1.92250132	2.10684918	2.30786031	2.52695020	3.02559950
20	1.72042843	1.80611123	1.98978886	2.19112314	2.41171402	2.65329771	3.20713547
21	1.76774021	1.86029457	2.05943147	2.27876807	2.52024116	2.78596259	3.39956360
22	1.81635307	1.91610341	2.13151158	2.36991879	2.63365201	2.92526072	3.60353742
23	1.86630278	1.97358651	2.20611448	2.46471554	2.75216635	3.07152376	3.81974966
24	1.91762610	2.03279411	2.28332849	2.56330416	2.87601383	3.22509994	4.04893464
25	1.97036082	2.09377793	2.36324498	2.66583633	3.00543446	3.38635494	4.29187072
26	2.02454575	2.15659127	2.44595856	2.77246978	3.14067901	3.55567269	4.54938296
27	2.08022075	2.22128901	2.53156711	2.88336858	3.28200956	3.73345632	4.82234594
28	2.13742682	2.28792768	2.62017196	2.99870332	3.42969999	3.92012914	5.11168670
29	2.19620606	2.35656551	2.71187798	3.11865145	3.58403649	4.11613560	5.41838790

30	2.25660173	2.42726247	2.80679370	3.24339751	3.74531813	4.32194238	5.74349117
31	2.31865828	2.50008035	2.90503148	3.37313341	3.91385745	4.53803949	6.08810064
32	2.38242138	2.57508276	3.00670759	3.50805875	4.08998104	4.76494147	6.45338668
33	2.44793797	2.65233524	3.11194235	3.64838110	4.27403018	5.00318854	6.84058988
34	2.51525626	2.73190530	3.22086033	3.79431634	4.46636154	5.25334797	7.25102528
35	2.58442581	2.81386245	3.33359045	3.94608899	4.66734781	5.51601537	7.68608679
36	2.65549752	2.89827833	3.45026611	4.10393255	4.87737846	5.79181614	8.14725200
37	2.72852370	2.98522668	3.57102543	4.26808986	5.09686049	6.08140694	8.63608712
38	2.80355810	3.07478348	3.69601132	4.43881345	5.32621921	6.38547729	9.15425235
39	2.88065595	3.16702698	3.82537171	4.61636599	5.56589908	6.70475115	9.70350749
40	2 95987399	3.26203779	3.95925972	4.80102063	5.81636454	7.03998871	10.28571794
41	3.04127052	3.35989893	4.09783381	4.99306145	6.07810094	7.39198815	10.90286101
42	3.12490546	3.46069589	4.24125799	5.19278391	6.35161548	7.76158756	11.55703267
43	3.21084036	3.56451677	4.38970202	5.40049527	6.63743818	8.14966693	12.25045463
44	3.29913847	3.67145227	4.54334160	5.61651508	6.93612290	8.55715028	12.98548191
45	3.38986478	3.78159584	4.70235855	5.84117568	7.24824843	8.98500779	13.76461083
46	3.48308606	3.89504372	4.86694110	6.07482271	7.57441961	9.43425818	14.59048748
47	3.57887093	4.01189503	5.03728404	6.31781562	7.91526849	9.90597109	15.46591673
48	3.67728988	4.13225188	5.21358898	6.57052824	8.27145557	10.40126965	16.39387173
49	3.77841535	4.25621944	5.39606459	6.83334937	8.64367107	10.92133313	17.37750403
50	3.88232177	4.38390602	5.58492686	7.10668335	9.03263627	11.46739979	18.42015427
55	4.44631964	5.08214859	6.63314114	8.64636692	11.25630817	14.63563092	24.65032159
60	5 09225136	5.89160310	7.87809090	10.51962741	14.02740793	18.67918589	32.98769085
65	5.83201974	6.82998273	9.35670068	12.79873522	17.48070239	23.83990056	44.14497165
70	6.67925676	7.91782191	11.11282526	15.57161835	21.78413558	30.42642554	59.07593018
75	7.64957472	9.17892567	13.19855038	18.94525466	27.14699629	38.83268592	79.05692079
80	8.76085402	10.64089056	15.67573754	23.04979907	33.83009643	49.56144107	105.79599348
85	10.03357258	12.33570855	18.61785881	28.04360494	42.15845513	63.25435344	141.57890449
90	11.49118322	14.30046711	22.11217595	34.11933334	52.53710530	80.73036505	189.46451123
95	13.16054584	16.57816077	26.26232856	41.51138594	65.47079168	103.03467645	253.54625498
100	15.07242234	19.21863198	31.19140798	50.50494818	81.55851803	131.50125785	339.30208351

Present Worth of $1 at Compound Interest

Periods	1 %	1¼ %	1½ %	1¾ %	2 %	2¼ %	2½ %
0	1.	1.	1.	1.	1.	1.	1.
1	0.99009901	0.98765432	0.98522167	0.98280098	0.98039216	0.97799511	0.97560976
2	0.98029605	0.97546106	0.97066175	0.96589777	0.96116878	0.95647444	0.95181440
3	0.97059015	0.96341833	0.95631699	0.94928528	0.94232233	0.93542732	0.92859941
4	0.96098034	0.95152428	0.94218423	0.93295851	0.92384543	0.91484335	0.90595064
5	0.95146569	0.93977706	0.92826033	0.91691254	0.90573081	0.89471232	0.88385429
6	0.94204524	0.92817488	0.91454219	0.90114254	0.88797138	0.87502427	0.86229687
7	0.93271805	0.91671593	0.90102679	0.88564378	0.87056018	0.85576946	0.84126524
8	0.92348322	0.90539845	0.88771112	0.87041157	0.85349037	0.83693835	0.82074657
9	0.91433982	0.89422069	0.87459224	0.85544135	0.83675527	0.81852161	0.80072836
10	0.90528695	0.88318093	0.86166723	0.84072860	0.82034830	0.80051013	0.78119840
11	0.89632372	0.87227746	0.84893323	0.82626889	0.80426304	0.78289499	0.76214478
12	0.88744923	0.86150860	0.83638742	0.81205788	0.78849318	0.76566748	0.74355589
13	0.87866260	0.85087269	0.82402702	0.79809128	0.77303253	0.74881905	0.72542038
14	0.86996297	0.84036809	0.81184928	0.78436490	0.75787502	0.73234137	0.70772720
15	0.86134947	0.82999318	0.79985150	0.77087459	0.74301473	0.71622628	0.69046556
16	0.85282126	0.81974635	0.78803104	0.75761631	0.72844581	0.70046580	0.67362493
17	0.84437749	0.80962602	0.77638526	0.74458605	0.71416256	0.68505212	0.65719506
18	0.83601731	0.79963064	0.76491159	0.73177990	0.70015937	0.66997763	0.64116591
19	0.82773992	0.78975866	0.75360747	0.71919401	0.68643076	0.65523484	0.62552772
20	0.81954447	0.78000855	0.74247042	0.70682458	0.67297133	0.64081647	0.61027094
21	0.81143017	0.77037881	0.73149795	0.69466789	0.65977582	0.62671538	0.59538629
22	0.80339621	0.76086796	0.72068763	0.68272028	0.64683904	0.61292457	0.58086467
23	0.79544179	0.75147453	0.71003708	0.67097817	0.63415592	0.59943724	0.56669724
24	0.78756613	0.74219707	0.69954392	0.65943800	0.62172149	0.58624668	0.55287535
25	0.77976844	0.73303414	0.68920583	0.64809632	0.60953087	0.57334639	0.53939059
26	0.77204796	0.72398434	0.67902052	0.63694970	0.59757928	0.56072997	0.52623472
27	0.76440392	0.71504626	0.66898574	0.62599479	0.58586204	0.54839117	0.51339973
28	0.75683557	0.70621853	0.65909925	0.61522829	0.57437455	0.53632388	0.50087778
29	0.74934215	0.69749978	0.64935887	0.60464697	0.56311231	0.52452213	0.48866125

30	0.74192292	0.68888867	0.63976243	0.59424764	0.55207089	0.51298008	0.47674269
31	0.73457715	0.68038387	0.63030781	0.58402716	0.54124597	0.50169201	0.46511481
32	0.72730411	0.67198407	0.62099292	0.57398247	0.53063330	0.49065233	0.45377055
33	0.72010307	0.66368797	0.61181568	0.56411053	0.52022873	0.47985558	0.44270298
34	0.71297334	0.65549429	0.60277407	0.55440839	0.51002817	0.46929641	0.43190534
35	0.70591420	0.64740177	0.59386608	0.54487311	0.50002761	0.45896960	0.42137107
36	0.69892495	0.63940916	0.58508974	0.53550183	0.49022315	0.44887002	0.41109372
37	0.69200490	0.63151522	0.57644309	0.52629172	0.48061093	0.43899268	0.40106705
38	0.68515337	0.62371873	0.56792423	0.51724002	0.47118719	0.42933270	0.39128492
39	0.67836967	0.61601850	0.55953126	0.50834400	0.46194822	0.41988528	0.38174139
40	0.67165314	0.60841334	0.55126232	0.49960098	0.45289042	0.41064575	0.37243062
41	0.66500311	0.60090206	0.54311559	0.49100834	0.44401021	0.40160954	0.36334695
42	0.65841892	0.59348352	0.53508925	0.48256348	0.43530413	0.39277216	0.35448483
43	0.65189992	0.58615656	0.52718153	0.47426386	0.42676875	0.38412925	0.34583886
44	0.64544546	0.57892006	0.51939067	0.46610699	0.41840074	0.37567653	0.33740376
45	0.63905492	0.57177290	0.51171494	0.45809040	0.41019680	0.36740981	0.32917440
46	0.63272764	0.56471397	0.50415265	0.45021170	0.40215373	0.35932500	0.32114576
47	0.62646301	0.55774219	0.49670212	0.44246850	0.39426836	0.35141809	0.31331294
48	0.62026041	0.55085649	0.48936170	0.43485848	0.38653761	0.34368518	0.30567116
49	0.61411921	0.54405579	0.48212975	0.42737934	0.37895844	0.33612242	0.29821576
50	0.60803882	0.53733905	0.47500468	0.42002883	0.37152788	0.32872608	0.29094221
55	0.57852808	0.50497892	0.44092800	0.38512970	0.33650425	0.29411528	0.25715052
60	0.55044962	0.47456760	0.40929597	0.35313025	0.30478227	0.26314856	0.22728359
65	0.52373392	0.44598775	0.37993321	0.32378956	0.27605069	0.23544226	0.20088557
70	0.49831486	0.41912905	0.35267692	0.29688670	0.25002761	0.21065309	0.17755358
75	0.47412949	0.39388787	0.32737599	0.27221914	0.22645771	0.18847391	0.15693149
80	0.45111794	0.37016679	0.30389015	0.24960114	0.20510973	0.16862993	0.13870457
85	0.42922324	0.34787426	0.28208917	0.22886242	0.18577420	0.15087528	0.12259463
90	0.40839119	0.32692425	0.26185218	0.20984682	0.16826142	0.13498997	0.10835579
95	0.38857020	0.30723591	0.24306699	0.19241118	0.15239955	0.12077719	0.09577073
100	0.36971121	0.28873326	0.22562944	0.17642422	0.13803297	0.10806084	0.08464737

Present Worth of $1 at Compound Interest—Continued

Periods	2¾%	3%	3½%	4%	4½%	5%	6%
0	1.	1.	1.	1.	1.	1.	1.
1	0.97323601	0.97087379	0.96618357	0.96153846	0.95693780	0.95238095	0.94339623
2	0.94718833	0.94259591	0.93351070	0.92455621	0.91572995	0.90702948	0.88999644
3	0.92183779	0.91514166	0.90194271	0.88899636	0.87629660	0.86383760	0.83961928
4	0.89716573	0.88848705	0.87144223	0.85480419	0.83856134	0.82270247	0.79209366
5	0.87315400	0.86260878	0.84197317	0.82192711	0.80245105	0.78352617	0.74725817
6	0.84978491	0.83748426	0.81350064	0.79031453	0.76789574	0.74621540	0.70496054
7	0.82704128	0.81309151	0.78599096	0.75991781	0.73482846	0.71068133	0.66505711
8	0.80490635	0.78940923	0.75941156	0.73069021	0.70318513	0.67683936	0.62741237
9	0.78336385	0.76641673	0.73373097	0.70258674	0.67290443	0.64460892	0.59189846
10	0.76239791	0.74409391	0.70891881	0.67556417	0.64392768	0.61391325	0.55839478
11	0.74199310	0.72242128	0.68494571	0.64958093	0.61619874	0.58467929	0.52678753
12	0.72213440	0.70137988	0.66178330	0.62459705	0.58966386	0.55683742	0.49696936
13	0.70280720	0.68095134	0.63940415	0.60057409	0.56427164	0.53032135	0.46883902
14	0.68399728	0.66111781	0.61778179	0.57747508	0.53997286	0.50506795	0.44230096
15	0.66569078	0.64186195	0.59689062	0.55526450	0.51672044	0.48101710	0.41726506
16	0.64787424	0.62316694	0.57670591	0.53390818	0.49446932	0.45811152	0.39364628
17	0.63053454	0.60510645	0.55720378	0.51337325	0.47317639	0.43629669	0.37136442
18	0.61365892	0.58739461	0.53836114	0.49362812	0.45280037	0.41552065	0.35034379
19	0.59723496	0.57028603	0.52015569	0.47464242	0.43330179	0.39573396	0.33051301
20	0.58125057	0.55367575	0.50256588	0.45638695	0.41464286	0.37688948	0.31180473
21	0.56569398	0.53754928	0.48557090	0.43883360	0.39678743	0.35894236	0.29415540
22	0.55055375	0.52189250	0.46915063	0.42195539	0.37970089	0.34184987	0.27750510
23	0.53581874	0.50669175	0.45328563	0.40572633	0.36335013	0.32557131	0.26179726
24	0.52147809	0.49193374	0.43795713	0.39012147	0.34770347	0.31006791	0.24697855
25	0.50752126	0.47760557	0.42314699	0.37511680	0.33273060	0.29530277	0.23299863
26	0.49393796	0.46369473	0.40883767	0.36068923	0.31840248	0.28124073	0.21981003
27	0.48071821	0.45018906	0.39501224	0.34681657	0.30469137	0.26784832	0.20736795
28	0.46785227	0.43707675	0.38165434	0.33347747	0.29157069	0.25509364	0.19563014
29	0.45533068	0.42434636	0.36874815	0.32065141	0.27901502	0.24294632	0.18455674

30	0.44314421	0.41198676	0.35627841	0.30831867	0.26700002	0.23137745	0.17411013
31	0.43128391	0.39998715	0.34423035	0.29646026	0.25550241	0.22035947	0.16425484
32	0.41974103	0.38833703	0.33258971	0.28505794	0.24499991	0.20986617	0.15495740
33	0.40850708	0.37702625	0.32134271	0.27409417	0.23397121	0.19987254	0.14618622
34	0.39757380	0.36604490	0.31047605	0.26355209	0.22389589	0.19035480	0.13791153
35	0.38693314	0.35538340	0.29997686	0.25341547	0.21425444	0.18129029	0.13010522
36	0.37657727	0.34503243	0.28983272	0.24366872	0.20502817	0.17265741	0.12274077
37	0.36649856	0.33498294	0.28003161	0.23429685	0.19619921	0.16443563	0.11579318
38	0.35668959	0.32522615	0.27056194	0.22528543	0.18775044	0.15660536	0.10923885
39	0.34714316	0.31575355	0.26141250	0.21662061	0.17966549	0.14914797	0.10305552
40	0.33785222	0.30655684	0.25257247	0.20828904	0.17192870	0.14204568	0.09722219
41	0.32880995	0.29762800	0.24403137	0.20027793	0.16452507	0.13528160	0.09171905
42	0.32000968	0.28895922	0.23577910	0.19257493	0.15744026	0.12883962	0.08652740
43	0.31144495	0.28054294	0.22780590	0.18516820	0.15066054	0.12270440	0.08162962
44	0.30310944	0.27237178	0.22010231	0.17804635	0.14417276	0.11686133	0.07700908
45	0.29499702	0.26443862	0.21265924	0.17119841	0.13796437	0.11129651	0.07265007
46	0.28710172	0.25673653	0.20546787	0.16461386	0.13202332	0.10599668	0.06853781
47	0.27941773	0.24925876	0.19851968	0.15828256	0.12633810	0.10094921	0.06465831
48	0.27193940	0.24199880	0.19180645	0.15219476	0.12089771	0.09614211	0.06099840
49	0.26466122	0.23495029	0.18532024	0.14634112	0.11569158	0.09156391	0.05754566
50	0.25757783	0.22810708	0.17905337	0.14071262	0.11070965	0.08720373	0.05428836
55	0.22490511	0.19676717	0.15075814	0.11565551	0.08883907	0.06832640	0.04056742
60	0.19637679	0.16973309	0.12693431	0.09506040	0.07128901	0.05353552	0.03031434
65	0.17146718	0.14641325	0.10687528	0.07813272	0.05720594	0.04194648	0.02265264
70	0.14971726	0.12629736	0.08998612	0.06421940	0.04590497	0.03286617	0.01692737
75	0.13072622	0.10894521	0.07576590	0.05278367	0.03683649	0.02575150	0.01264911
80	0.11414412	0.09397710	0.06379285	0.04338433	0.02955948	0.02017698	0.00945215
85	0.09966540	0.08106547	0.05371187	0.03565875	0.02372003	0.01580919	0.00706320
90	0.08702324	0.06992779	0.04522395	0.02930890	0.01903417	0.01238691	0.00527803
95	0.07598469	0.06032032	0.03807735	0.02408978	0.01527399	0.00970547	0.00394405
100	0.06634634	0.05203284	0.03206011	0.01980004	0.01225663	0.00760449	0.00294723

Amount of Annuity of $1 at End of Each Period

Periods	1%	1¼%	1½%	1¾%	2%	2¼%	2½%
1	1.	1.	1.	1.	1.	1.	1.
2	2.01	2.0125	2.015	2.0175	2.02	2.0225	2.025
3	3.0301	3.03765625	3.045225	3.05280625	3.0604	3.06800625	3.075625
4	4.060401	4.07562695	4.09090338	4.10623036	4.121608	4.13703639	4.15251563
5	5.10100501	5.12657229	5.15226693	5.17808939	5.20404016	5.23011971	5.25632852
6	6.15201506	6.19065444	6.22955093	6.26870596	6.30812096	6.34779740	6.38773673
7	7.21353521	7.26803762	7.32299419	7.37840831	7.43428338	7.49062284	7.54743015
8	8.28567056	8.35888809	8.43283911	8.50753045	8.58296905	8.65916186	8.73611590
9	9.36852727	9.46337420	9.55933169	9.65641224	9.75462843	9.85399300	9.95451880
10	10.46221254	10.58166637	10.70272167	10.82539945	10.94972100	11.07570784	11.20338177
11	11.56683467	11.71393720	11.86326249	12.01484394	12.16871542	12.32491127	12.48346631
12	12.68250301	12.86036142	13.04121143	13.22510371	13.41208973	13.60222177	13.79555297
13	13.80932804	14.02111594	14.23682960	14.45654303	14.68033152	14.90827176	15.14044179
14	14.94742132	15.19637988	15.45038205	15.70953253	15.97393815	16.24370788	16.51895284
15	16.09689554	16.38633463	16.68213778	16.98444935	17.29341692	17.60919130	17.93192666
16	17.25786449	17.59116382	17.93236984	18.28167721	18.63928525	19.00539811	19.38022483
17	18.43044314	18.81105336	19.20135539	19.60160656	20.01207096	20.43301957	20.86473045
18	19.61474757	20.04619153	20.48937572	20.94463468	21.41231238	21.89276251	22.38634871
19	20.81089504	21.29676893	21.79671636	22.31116578	22.84055863	23.38534966	23.94600743
20	22.01900399	22.56297854	23.12366710	23.70161119	24.29736980	24.91152003	25.54465761
21	23.23919403	23.84501577	24.47052211	25.11638939	25.78331719	26.47202923	27.18327405
22	24.47158598	25.14307847	25.83757994	26.55592620	27.29898354	28.06764989	28.86285590
23	25.71630183	26.45736695	27.22514364	28.02065490	28.84496321	29.69917201	30.58442730
24	26.97346485	27.78808403	28.63352080	29.51101637	30.42186247	31.36740338	32.34903798
25	28.24319950	29.13543508	30.06302361	31.02745915	32.03029972	33.07316996	34.15776393
26	29.52563150	30.49962802	31.51396896	32.57043969	33.67090572	34.81731628	36.01170803
27	30.82088781	31.88087337	32.98667850	34.14042238	35.34432383	36.60070590	37.91200073
28	32.12909669	33.27938429	34.48147867	35.73787977	37.05121031	38.42422178	39.85980075
29	33.45038766	34.69537659	35.99870085	37.36329267	38.79223451	40.28876677	41.85629577

30	34.78489153	36.12906880	37.53868137	39.01715029	40.56807921	42.19526402	43.90270316
31	36.13274045	37.58068216	39.10176159	40.69995042	42.37944079	44.14465746	46.00027074
32	37.49406785	39.05044069	40.68828801	42.41219955	44.22702961	46.13791226	48.15027751
33	38.86900853	40.53857120	42.29861233	44.15441305	46.11157020	48.17601528	50.35403445
34	40.25769862	42.04530334	43.93309152	45.92711527	48.03380160	50.25997563	52.61288531
35	41.66027560	43.57086963	45.59208789	47.73083979	49.99447763	52.39082508	54.92820744
36	43.07687836	45.11550550	47.27596921	49.56612949	51.99436719	54.56961864	57.30141263
37	44.50764714	46.67944932	48.98510874	51.43353675	54.03425453	56.79743506	59.73394794
38	45.95272361	48.26294243	50.71988538	53.33362365	56.11493962	59.07537735	62.22729664
39	47.41225085	49.86622921	52.48068366	55.26696206	58.23723841	61.40457334	64.78297906
40	48.88637336	51.48955708	54.26789391	57.23413390	60.41098318	63.78617624	67.40255354
41	50.37523709	53.13317654	56.08191232	59.23573124	62.61002284	66.22136521	70.08761737
42	51.87898946	54.79734125	57.92314100	61.27235654	64.86222330	68.71134592	72.83980781
43	53.39777936	56.48230801	59.79198812	63.34462278	67.15946777	71.25735121	75.66080300
44	54.93175715	58.18833687	61.68886794	65.45315367	69.50265712	73.86064161	78.55232308
45	56.48107472	59.91569108	63.61420096	67.59858386	71.89271027	76.52250605	81.51613116
46	58.04588547	61.66463721	65.56841398	69.78155908	74.33056447	79.24426243	84.55403443
47	59.62634432	63.43544518	67.55194018	72.00273637	76.81717576	82.02725834	87.66788530
48	61.22260777	65.22838824	69.56521929	74.26278425	79.35351927	84.87287165	90.85958243
49	62.83483385	67.04374310	71.60869758	76.56238298	81.94058966	87.78251126	94.13107199
50	64.46318218	68.88178989	73.68282804	78.90222468	84.57940145	90.75761776	97.48434879
55	72.85245735	78.42245562	84.52959893	91.23016259	98.58653365	106.66788460	115.55092136
60	81.66966986	88.57450776	96.21465171	104.67521588	114.05153942	124.45043493	135.99158995
65	90.93664882	99.37712526	108.80277215	119.33861370	131.12615541	144.32559477	159.11833027
70	100.67633684	110.87199776	122.36375295	135.33075826	149.97791114	166.53961758	185.28411421
75	110.91284684	123.10348644	136.97278063	152.77205601	170.79177276	191.36773536	214.88829705
80	121.67152172	136.11879526	152.71085247	171.79382424	193.77195780	219.11756877	248.38271265
85	132.97899715	149.96815310	169.66522551	192.53927976	219.14393897	250.13293857	286.27856955
90	144.86326746	164.70500762	187.92990038	215.16461718	247.15665632	284.79812555	329.15425328
95	157.35375501	180.38623151	207.60614246	239.84018495	278.08495978	323.54263177	377.66415398
100	170.48138294	197.07234200	228.80304330	266.75176789	312.23230591	366.84650213	432.54865404

Amount of Annuity of $1 at End of Each Period—Continued

Periods	2¾%	3%	3½%	4%	4½%	5%	6%
1	1.	1.	1.	1.	1.	1.	1.
2	2.0275	2.03	2.035	2.04	2.045	2.05	2.06
3	3.08325625	3.0909	3.106225	3.1216	3.137025	3.1525	3.1836
4	4.16804580	4.183627	4.21494288	4.246464	4.27819113	4.310125	4.374616
5	5.28266706	5.30913581	5.36246588	5.41632256	5.47070973	5.52563125	5.63709296
6	6.42794040	6.46840988	6.55015218	6.63297546	6.71689166	6.80191281	6.97531854
7	7.60470876	7.66246218	7.77940751	7.89829448	8.01915179	8.14200845	8.39383765
8	8.81383825	8.89233605	9.05168677	9.21422626	9.38001362	9.54910888	9.89746791
9	10.05621880	10.15910613	10.36849581	10.58279531	10.80211423	11.02656432	11.49131598
10	11.33276482	11.46387931	11.73139316	12.00610712	12.28820937	12.57789254	13.18079494
11	12.64441585	12.80779569	13.14199192	13.48635141	13.84117879	14.20678716	14.97164264
12	13.99213729	14.19202956	14.60196164	15.02580546	15.46403184	15.91712652	16.86994120
13	15.37692107	15.61779045	16.11303030	16.62683768	17.15991327	17.71298285	18.88213767
14	16.79978639	17.08632416	17.67698636	18.29191119	18.93210937	19.59863199	21.01506593
15	18.26178052	18.59891389	19.29568088	20.02358764	20.78405429	21.57856359	23.27596988
16	19.76397948	20.15688130	20.97102971	21.82453114	22.71933673	23.65749177	25.67252808
17	21.30748892	21.76158774	22.70501575	23.69751239	24.74170689	25.84036636	28.21287976
18	22.89344487	23.41443537	24.49969130	25.64541288	26.85508370	28.13238467	30.90565255
19	24.52301460	25.11686844	26.35718050	27.67122940	29.06356246	30.53900391	33.75999170
20	26.19739750	26.87037449	28.27968181	29.77807858	31.37142277	33.06595410	36.78559120
21	27.91782593	28.67648572	30.26947068	31.96920172	33.78313680	35.71925181	39.99272668
22	29.68556615	30.53678030	32.32890215	34.24796979	36.30337795	38.50521440	43.39229028
23	31.50191921	32.45288370	34.46041373	36.61788858	38.93702996	41.43047512	46.99582769
24	33.36822199	34.42647022	36.66652821	39.08260412	41.68919631	44.50199887	50.81557735
25	35.28584810	36.45926432	38.94985669	41.64590829	44.56521015	47.72709882	54.86451200
26	37.25620892	38.55304225	41.31310168	44.31174462	47.57064460	51.11345376	59.15638272
27	39.28075467	40.70963352	43.75906024	47.08421440	50.71132361	54.66912645	63.70576568
28	41.36097542	42.93092252	46.29062734	49.96758298	53.99333317	58.40258277	68.52811162
29	43.49840224	45.21885020	48.91079930	52.96628630	57.42303316	62.32271191	73.63979832

30	45.69460830	47.57541571	51.62267728	56.08493775	61.00706966	66.43884750	79.05818622
31	47.95121003	50.00267818	54.42947098	59.32833526	64.75238779	70.76078988	84.80167739
32	50.26986831	52.50275852	57.33450247	62.70146867	68.66624524	75.29882937	90.88977803
33	52.65228969	55.07784128	60.34121005	66.20952742	72.75622628	80.06377084	97.34316471
34	55.10022765	57.73017652	63.45315240	69.85790851	77.03025646	85.06695938	104.18375460
35	57.61548391	60.46208181	66.67401274	73.65222486	81.49661800	90.32030735	111.43477987
36	60.19990972	63.27594427	70.00760318	77.59831385	86.16396581	95.83632272	119.12086666
37	62.85540724	66.17422259	73.45786930	81.70224640	91.04134427	101.62813886	127.26811866
38	65.58393094	69.15944927	77.02889472	85.97033626	96.13820476	107.70954580	135.90420578
39	68.38748904	72.23423275	80.72490604	90.40914971	101.46442398	114.09502309	145.05845813
40	71.26814499	75.40125973	84.55027775	95.02551570	107.03032306	120.79977424	154.76196562
41	74.22801898	78.66329753	88.50953747	99.82653633	112.84668760	127.83976295	165.04768356
42	77.26928950	82.02319645	92.60737128	104.81959778	118.92478854	135.23175110	175.95054457
43	80.39419496	85.48389234	96.84862928	110.01238169	125.27640402	142.99333866	187.50757724
44	83.60503532	89.04840911	101.23833130	115.41287696	131.91384220	151.14300559	199.75803188
45	86.90417379	92.71986139	105.78167290	121.02939204	138.84996510	159.70015587	212.74351379
46	90.29403857	96.50145723	110.48403145	126.87056772	146.09821353	168.68516366	226.50812462
47	93.77712463	100.39650095	115.35097255	132.94539043	153.67263314	178.11942185	241.09861210
48	97.35599556	104.40839598	120.38825659	139.26320604	161.58790163	188.02539294	256.56452882
49	101.03328544	108.54064785	125.60184557	145.83373429	169.85935720	198.42666259	272.95840055
50	104.81170079	112.79686729	130.99791016	152.66708366	178.50302828	209.34799572	290.33590458
55	125.32071411	136.07161972	160.94688984	191.15917299	227.91795938	272.71261833	394.17202657
60	148.80914038	163.05343680	196.51688288	237.99068520	289.49795398	353.58371788	533.12818089
65	175.70980889	194.33275782	238.76287650	294.96838045	366.23783096	456.79801118	719.08286076
70	206.51842746	230.59406374	288.93786459	364.29045876	461.86967955	588.52851071	967.93216965
75	241.80271709	272.63085559	348.53001083	448.63136652	581.04436193	756.65371848	1300.94867977
80	282.21287345	321.36301855	419.30678685	551.24497675	729.55769854	971.22882134	1746.59989137
85	328.49354837	377.85695165	503.36739448	676.09012345	914.63233612	1245.08706889	2342.98174142
90	381.49757170	443.34890365	603.20502701	827.98333354	1145.26900659	1594.60730098	3141.07518718
95	442.20166674	519.27202569	721.78081595	1012.78464845	1432.68425949	2040.69352892	4209.10424961
100	511.72444867	607.28773270	862.61165666	1237.62370461	1790.85595627	2610.02515693	5638.36805857

Present Worth of Annuity of $1 at End of Each Period

Periods	1%	1¼%	1½%	1¾%	2%	2¼%	2½%
1	0.99009901	0.98765432	0.98522167	0.98280098	0.98039216	0.97799511	0.97560976
2	1.97039506	1.96311538	1.95588342	1.94869875	1.94156094	1.93446955	1.92742415
3	2.94098521	2.92653371	2.91220042	2.89798403	2.88388327	2.86989687	2.85602356
4	3.90196555	3.87805798	3.85438465	3.83094254	3.80772870	3.78474021	3.76197421
5	4.85343124	4.81783504	4.78264497	4.74785508	4.71345951	4.67945253	4.64582850
6	5.79547647	5.74600992	5.69718717	5.64899762	5.60143089	5.55447680	5.50812536
7	6.72819453	6.66272585	6.59821396	6.53464139	6.47199107	6.41024626	6.34939060
8	7.65167775	7.56812429	7.48592508	7.40505297	7.32548144	7.24718461	7.17013717
9	8.56601758	8.46234498	8.36051732	8.26049432	8.16223671	8.06570622	7.97086553
10	9.47130453	9.34552591	9.22218455	9.10122291	8.98258501	8.86621635	8.75206393
11	10.36762825	10.21780337	10.07111779	9.92749181	9.78684805	9.64911134	9.51420871
12	11.25507747	11.07931197	10.90750521	10.73954969	10.57534122	10.41477882	10.25776460
13	12.13374007	11.93018466	11.73153222	11.53764097	11.34837375	11.16359787	10.98318497
14	13.00370304	12.77055275	12.54338150	12.32200587	12.10624877	11.89593924	11.69091217
15	13.86505252	13.60054592	13.34323301	13.09288046	12.84926350	12.61216551	12.38137773
16	14.71787378	14.42029227	14.13126405	13.85049677	13.57770931	13.31263131	13.05500266
17	15.56225127	15.22991829	14.90764931	14.59508282	14.29187188	13.99768343	13.71219772
18	16.39826858	16.02954893	15.67256089	15.32686272	14.99203125	14.66766106	14.35336363
19	17.22600850	16.81930759	16.42616837	16.04605673	15.67846201	15.32289590	14.97889134
20	18.04555297	17.59931613	17.16863879	16.75288130	16.35143334	15.96731237	15.58916229
21	18.85698313	18.36969495	17.90013673	17.44754919	17.01120916	16.59042775	16.18454857
22	19.66037934	19.13056291	18.62082437	18.13026948	17.65804820	17.20335232	16.76541324
23	20.45582113	19.88203744	19.33086145	18.80124764	18.29220412	17.80278955	17.33211048
24	21.24338726	20.62423451	20.03040537	19.46068565	18.91392560	18.38903624	17.88498583
25	22.02315570	21.35726865	20.71961120	20.10878196	19.52345647	18.96238263	18.42437642
26	22.79520366	22.08125299	21.39863172	20.74573166	20.12103576	19.52311260	18.95061114
27	23.55960759	22.79629925	22.06761746	21.37172644	20.70689780	20.07150376	19.46401087
28	24.31644316	23.50251778	22.72671671	21.98695474	21.28127236	20.60782764	19.96488866
29	25.06578530	24.20001756	23.37607558	22.59160171	21.84438466	21.13234977	20.45354991

30	25.80770822	24.88890623	24.01583801	23.18584934	22.39645555	21.64532985	20.93029259
31	26.54228537	25.56929010	24.64614582	23.76987650	22.93770152	22.14702186	21.39540741
32	27.26958947	26.24127418	25.26713874	24.34385897	23.46833482	22.63767419	21.84917796
33	27.98969255	26.90496215	25.87895442	24.90796951	23.98856355	23.11752977	22.29188094
34	28.70266589	27.56045644	26.48172849	25.46237789	24.49859172	23.58682618	22.72378628
35	29.40858009	28.20785822	27.07559458	26.00725100	24.99861933	24.04579577	23.14515734
36	30.10750504	28.84726737	27.66068431	26.54275283	25.48884248	24.49466579	23.55625107
37	30.79950994	29.47878259	28.23712740	27.06904455	25.96945341	24.93365848	23.95731812
38	31.48466330	30.10250133	28.80505163	27.58628457	26.44064060	25.36299118	24.34860304
39	32.16303298	30.71851983	29.36458288	28.09462857	26.90258883	25.78287646	24.73034443
40	32.83468611	31.32693316	29.91584520	28.59422955	27.35547924	26.19352221	25.10277505
41	33.49968922	31.92783522	30.45896079	29.08523789	27.79948945	26.59513174	25.46612200
42	34.15810814	32.52131874	30.99405004	29.56780136	28.23479358	26.98790390	25.82060683
43	34.81000806	33.10747530	31.52123157	30.04206522	28.66156233	27.37203316	26.16644569
44	35.45515352	33.68639536	32.04062223	30.50817221	29.07996307	27.74770969	26.50384945
45	36.09450844	34.25816825	32.55233718	30.96626261	29.49015987	28.11511950	26.83302386
46	36.72723608	34.82288222	33.05648983	31.41647431	29.89231360	28.47444450	27.15416962
47	37.35369909	35.38062442	33.55319195	31.85894281	30.28658196	28.82586259	27.46748355
48	37.97395949	35.93148091	34.04255365	32.29380129	30.67311957	29.16954777	27.77315371
49	38.58807871	36.47553670	34.52468339	32.72118063	31.05207801	29.50567019	28.07136947
50	39.19611753	37.01287574	34.99968807	33.14120946	31.42360589	29.83439627	28.36231168
55	42.14719216	39.60168667	37.27146681	35.13544550	33.17478752	31.37265438	29.71397928
60	44.95503841	42.03459179	39.38026889	36.96398552	34.76088668	32.74895285	30.90865649
65	47.62660777	44.32098022	41.33778618	38.64059678	36.19746555	33.98034405	31.96457705
70	50.16851435	46 46967562	43.15487183	40.17790267	37.49861929	35.08208492	32.89785698
75	52.58705124	48.48897027	44.84160034	41.58747771	38.67711433	36.06782605	33.72274044
80	54 88820611	50.38665706	46.40732349	42.87993474	39.74451359	36.94978079	34.45181722
85	57.07767600	52.17005958	47.86072218	44.06500479	40.71128999	37.73887655	35.09621486
90	59.16088148	53.84606035	49.20985452	45.15161037	41.58692916	38.44489025	35.66576848
95	61.14298002	55.42112744	50.46220054	46.14793265	42.38002254	39.07656940	36.16917089
100	63.02887877	56.90133936	51.62470367	47.06147304	43.09835164	39.64174052	36.61410526

Present Worth of Annuity of $1 at End of Each Period—Continued

Periods	2¾%	3%	3½%	4%	4½%	5%	6%
1	0.97323601	0.97087379	0.96618357	0.96153846	0.95693780	0.95238095	0.94339623
2	1.92042434	1.91346970	1.89969428	1.88609467	1.87266775	1.85941043	1.83339267
3	2.84226213	2.82861135	2.80163698	2.77509103	2.74896435	2.72324803	2.67301195
4	3.73942787	3.71709840	3.67307921	3.62989522	3.58752570	3.54595050	3.46510561
5	4.61258186	4.57970719	4.51505238	4.45182233	4.38997674	4.32947667	4.21236379
6	5.46236678	5.41719144	5.32855302	5.24213686	5.15787248	5.07569206	4.91732433
7	6.28940806	6.23028296	6.11454398	6.00205467	5.89270094	5.78637340	5.58238144
8	7.09431441	7.01969219	6.87395554	6.73274487	6.59588607	6.46321276	6.20979381
9	7.87767826	7.78610892	7.60768651	7.43533161	7.26879050	7.10782168	6.80169227
10	8.64007616	8.53020284	8.31660532	8.11089578	7.91271818	7.72173493	7.36008705
11	9.38206926	9.25262411	9.00155104	8.76047671	8.52891692	8.30641422	7.88687458
12	10.10420366	9.95400399	9.66333433	9.38507376	9.11858078	8.86325164	8.38384394
13	10.80701086	10.63495533	10.30273849	9.98564785	9.68285242	9.39357299	8.85268296
14	11.49100814	11.29607314	10.92052028	10.56312293	10.22282528	9.89864094	9.29498393
15	12.15669892	11.93793509	11.51741090	11.11838743	10.73954573	10.37965804	9.71224899
16	12.80457315	12.56110203	12.09411681	11.65229561	11.23401505	10.83776956	10.10589527
17	13.43510769	13.16611847	12.65132059	12.16566885	11.70719143	11.27406625	10.47725969
18	14.04876661	13.75351308	13.18968173	12.65929697	12.15999180	11.68958690	10.82760348
19	14.64600157	14.32379911	13.70983742	13.13393940	12.59329359	12.08532086	11.15811649
20	15.22725213	14.87747486	14.21240330	13.59032634	13.00793645	12.46221034	11.46992122
21	15.79294612	15.41502414	14.69797420	14.02915995	13.40472388	12.82115271	11.76407662
22	16.34349987	15.93691664	15.16712484	14.45111533	13.78442476	13.16300258	12.04158172
23	16.87931861	16.44360839	15.62041047	14.85684167	14.14777489	13.48857388	12.30337898
24	17.40079670	16.93554212	16.05836760	15.24696314	14.49547837	13.79864179	12.55035753
25	17.90831795	17.41314769	16.48151459	15.62207994	14.82820896	14.09394457	12.78335616
26	18.40225592	17.87684242	16.89035226	15.98276918	15.14661145	14.37518530	13.00316619
27	18.88297413	18.32703147	17.28536451	16.32958575	15.45130282	14.64303362	13.21053414
28	19.35082640	18.76410823	17.66701885	16.66306322	15.74287351	14.89812726	13.40616428
29	19.80615708	19.18845459	18.03576700	16.98371463	16.02188853	15.14107358	13.59072102

30	20.24930130	19.60044135	18.39204541	17.29203330	16.28888854	15.37245103	13.76483115
31	20.68058520	20.00042849	18.73627576	17.58849356	16.54439095	15.59281050	13.92908599
32	21.10032623	20.38876553	19.06886547	17.87355150	16.78889086	15.80267667	14.08404339
33	21.50883332	20.76579178	19.39020818	18.14764567	17.02286207	16.00254921	14.23022961
34	21.90640712	21.13183668	19.70068423	18.41119776	17.24675796	16.19290401	14.36814114
35	22.29334026	21.48722007	20.00066110	18.66461323	17.46101240	16.37419429	14.49824636
36	22.66991753	21.83225250	20.29049381	18.90828195	17.66604058	16.54685171	14.62098713
37	23.03641609	22.16723544	20.57052542	19.14257880	17.86223979	16.71128734	14.73678031
38	23.39310568	22.49246159	20.84108736	19.36786423	18.04999023	16.86789271	14.84601916
39	23.74024884	22.80821513	21.10249987	19.58448484	18.22965572	17.01704067	14.94907468
40	24.07810106	23.11477197	21.35507234	19.79277388	18.40158442	17.15908635	15.04629687
41	24.40691101	23.41239997	21.59910371	19.99305181	18.56610949	17.29436796	15.13801592
42	24.72692069	23.70135920	21.83488281	20.18562674	18.72354975	17.42320758	15.22454332
43	25.03836563	23.98190213	22.06268870	20.37079494	18.87421029	17.54591198	15.30617294
44	25.34147507	24.25427392	22.28279102	20.54884129	19.01838305	17.66277331	15.38318202
45	25.63647209	24.51871254	22.49545026	20.72003970	19.15634742	17.77406982	15.45583209
46	25.92357381	24.77544907	22.70091813	20.88465356	19.28837074	17.88006650	15.52436990
47	26.20299154	25.02470783	22.89943780	21.04293612	19.41470884	17.98101571	15.58902821
48	26.47493094	25.26670664	23.09124425	21.19513088	19.53560654	18.07715782	15.65002661
49	26.73959215	25.50165693	23.27656450	21.34147200	19.65129813	18.16872173	15.70757227
50	26.99716998	25.72976401	23.45561787	21.48218462	19.76200778	18.25592546	15.76186064
55	28.18526879	26.77442764	24.26405323	22.10861218	20.24802057	18.63347196	15.99054297
60	29.22266201	27.67556367	24.94473412	22.62348997	20.63802204	18.92928952	16.16142771
65	30.12846605	28.45289152	25.51784916	23.04668199	20.95097913	19.16107033	16.28912272
70	30.91937247	29.12342135	26.00039664	23.39451498	21.20211187	19.34267665	16.38454387
75	31.60995558	29.70182628	26.40668868	23.68040834	21.40363360	19.48496995	16.45584810
80	32.21294098	30.20076345	26.74877567	23.91539185	21.56534493	19.59646048	16.50913077
85	32.73944009	30.63115103	27.03680373	24.10853116	21.69511035	19.68381623	16.54894668
90	33.19915489	31.00240714	27.27931564	24.26727759	21.79924075	19.75226174	16.57869944
95	33.60055671	31.32265592	27.43350415	24.39775559	21.88280030	19.80589059	16.60093244
100	33.95104232	31.59890534	27.65542540	24.50499900	21.94985274	19.84791020	16.61754623

Average

DEFINITION.—An average is a figure or sum which is representative of a series. It is employed, for sake of brevity, in calculations, and makes possible comparisons of two or more series representing numerous and varied observations.

A **simple average** is found by adding the units to be averaged and dividing by the number of the units.

A **weighted average** is one which takes into account not merely the number of units to be averaged, but also makes allowance for the value of each unit.

A **moving average** makes use of the simple average in a time series where the units of time are of uniform duration and uninterrupted sequence. The moving average is determined by taking a simple average of as many units of the time series as is desired as a starting point; then, after the lapse of each time unit, dropping the first unit in the series and adding the next in order of time, in each instance finding the simple average.

A **progressive average** is one secured by finding a series of simple averages, the dividend being increased each time by adding a new unit and the divisor being increased each time by 1.

In each of the above definitions the average is secured by dividing by the number of units in the series. These are all arithmetic averages or **means.** Sometimes, however, it is desirable to employ the **mode** or the **median** as being more representative than the **mean.** The **mode** is that unit in a series which is most typical of the series. The **median** is the unit which stands midway between the extreme units in the series. The mode is always represented in the series, but the median is represented by an actual unit only when the number of units in the series is odd.

SIMPLE AVERAGE ILLUSTRATED.—Innumerable illustrations of simple averages may be found. Thus, in determining the value of good-will of an enterprise, it is customary to take a simple average of profits over a period of the past 4 or 5 years, and then determine how much this average is in excess of a fair rate of return on invested capital and a fair allowance for managerial services. This excess is then capitalized at a given number of years' purchase.

Again, suppose it is desired to find the average monthly sales of a business, the amounts for each of 12 months being as follows:

Jan.	$ 5,827.21
Feb.	4,312.17
Mar.	4,877.89
Apr.	4,998.21
May	5,121.12
June	4,653.19
July	3,121.10
Aug.	3,336.81
Sept.	4,827.64
Oct.	4,912.11
Nov.	5,227.67
Dec.	6,418.10
Total for year	$57,633.22

$57,633.22 ÷ 12 = $4,802.77, average monthly sales.

WEIGHTED AVERAGE ILLUSTRATED.—Sometimes the items which enter into an average differ in more than one respect. Thus, if we invest \$1,000 at 5%, \$2,000 at 6%, and \$4,000 at 7%, we cannot find the average return by adding 5, 6, and 7 together and dividing by 3, but we make allowance for the amounts which draw these rates, respectively. This we do by multiplying the amount invested by the rate. We then find the average rate by dividing this product by the total amount invested. This is shown below:

Investment	Rate	Product
\$1,000	5%	\$ 50
2,000	6%	120
4,000	7%	280
\$7,000		\$450

450 ÷ 7,000 = 6.429%, the weighted average rate of return.

MOVING AVERAGE ILLUSTRATED.—The following figures represent the monthly sales of a concern for a 2-year period expressed in round numbers:

	1920	1921
Jan.	\$12,000	\$17,500
Feb.	11,500	16,000
Mar.	11,700	17,000
Apr.	12,000	18,000
May	11,000	18,500
June	13,000	19,000
July	12,500	19,000
Aug.	14,000	19,500
Sept.	15,000	22,000
Oct.	16,000	26,000
Nov.	16,500	27,000
Dec.	18,000	30,000

Taking the year as the basis, first find the average for the 12 months, Jan. to Dec., 1920, which amounts to \$13,600. Next find the average for the 12-month period, Feb. 1920, to Jan. 1921. That is, Jan. 1920 is dropped from the computation, while Jan. 1921 is included. The average is then found to be \$14,058.33. This process is continued, each time 1 month being dropped at the beginning and one added at the end of the yearly period, until Dec. 1921 is included. The following series is the result:

Period (dates inclusive)	Moving Average
Jan. 1920 – Dec. 1920	\$13,600.00
Feb. " – Jan. 1921	14,058.33
Mar. " – Feb. "	14,433.33
Apr. " – Mar. "	14,875.00
May " – Apr. "	15,375.00
June " – May "	16,000.00
July " – June "	16,500.00
Aug. " – July "	17,041.67
Sept. " – Aug. "	17,500.00
Oct. " – Sept. "	18,083.33
Nov " – Oct. "	18,916.67
Dec. " – Nov. "	19,791.67
Jan. " – Dec. "	20,791.67

When the moving average is employed, the effects of seasonal variations are avoided and the underlying tendencies are brought out.

PROGRESSIVE AVERAGE ILLUSTRATED.—The following table shows the progressive average for the data given in the preceding illustration. The first average is for the first two months of 1920, and the following averages are secured by including an additional month each time.

	Progressive Average
Jan., 1920 – Feb. 1920	$11,750.00
" " – Mar. "	11,733.33
" " – Apr. "	11,800.00
" " – May "	11,640.00
" " – June "	11,866.67
" " – July "	11,957.14
" " – Aug. "	12,212.50
" " – Sept. "	12,522.22
" " – Oct. "	12,870.00
" " – Nov. "	13,200.00
" " – Dec. "	13,600.00
" " – Jan. 1921	13,900.00
" " – Feb. "	14,050.00
" " – Mar. "	14,246.67
" " – Apr. "	14,481.25
" " – May "	14,717.65
" " – June "	14,955.56
" " – July "	15,168.42
" " – Aug. "	15,385.00
" " – Sept. "	15,700.00
" " – Oct. "	16,254.55
" " – Nov. "	16,639.13
" " – Dec. "	17,195.83

Average Applied to Accounts

THE AVERAGE DATE.—The purpose of averaging an account is to determine a date on which an account consisting of two or more items can be settled equitably to both parties concerned. It is sometimes desirable to compute the average date for the purpose of determining the date of maturity of a note given in settlement of an account. It is also sometimes used to compute interest on the balance instead of on the separate items of an account.

AVERAGE DATE ILLUSTRATED.—On Mar. 1, A buys from B, merchandise on account, 60 days, $500; on Mar. 31, he again buys merchandise on account, 60 days, $500. The first item is due Apr. 30, and the second May 30. Each item may be paid at maturity, or the total, $1,000, may be paid at the average due date, which is May 15. This date might be made the due date for a single note covering both items, due May 15, instead of two notes due respectively, on July 31 and Aug. 29.

If A should settle this account on June 16 by a single payment of $1,000, he would pay interest at say 6% as follows:

On $500, Apr. 30–June 16, 47 days	$3.91
" $500, May 30–June 16, 17 "	1.42
	$5.33

The interest may be computed on the balance of $1,000 for the time between average due date, May 15, and June 16, 32 days, which also gives $5.33 as a result.

If the amounts differ, they must be taken into consideration. If the amounts in the above illustration are changed to stand as follows: Mar. 1, A buys from B, merchandise on account, 60 days, $1,000; on Mar. 31, 60 days, $500; then the $1,000 item is due Apr. 30, and the $500 item May 30. Average due date would be May 10 because the $1,000 paid 10 days before maturity offsets the $500 paid 20 days after maturity.

When accounts become more complicated, it is necessary to employ the principle of the weighted average and to select a basic or focal date for calculating time. The last day of the month preceding the earliest date used in averaging should be used for this purpose. Take the following account:

Date of Transaction	Term of Payment	Date Used in Averaging	Amount
Mar. 1	60 days	Apr. 30	$1,000
" 31	60 "	May 30	500

Since the first date used in averaging is Apr. 30, the last day of the preceding month, Mar. 31, is the focal date to select. The following steps should next be taken:

1. Assume payment of each item on the focal date.
2. Determine how many days each item would be prepaid if paid on focal date.
3. Multiply its amount by this number.
4. Add results so obtained.
5. Divide the sum thus secured by the total of the items.

The quotient is the number of days the average date is preceded by the focal date.

These rules are applied to the account given above as follows:

1. Assume payment of both items on Mar. 31, the focal date.
2. Consequently, the first item is assumed to be prepaid 30 days; the second, 60 days.
3. Paying $1,000, 30 days before due, is equivalent to paying $1, 30,000 (1,000 × 30) days before it is due; and paying $500, 60 days before it is due, is equivalent to paying $1,30,000 (500 × 60) days before it is due.
4. The assumed prepayments are equivalent to the prepayment of $1, 60,000 days.
5. One dollar prepaid 60,000 days is equivalent to $1,500 prepaid 1/1,500 of 60,000, or 40 days. The average date is therefore 40 days after Mar. 31, or May 10.

When more than 1 month intervenes between the focal date and the date of any item in the account, the reduction of months to days may be avoided by the following method:

1. State time in months and days.
2. Multiply amount of each item by the number of months to obtain a product of months; and by number of days to obtain a product of days.
3. Add products of months, also products of days.
4. Reduce sum of products of months to days by multiplying by 30.
5. To this product add the product of days previously determined.
6. Divide this total by the balance of the account to find time in days between focal and average dates.
7. Reduce this to months and days on basis of 30 days to a month.

COMPOUND AVERAGE.—When both debit and credit items are included in an account, the average date is found by compound average. The steps necessary are as follows:

1. Determine products of months and days for both debits and credits.
2. Determine difference between sum of debit products and sum of credit products.
3. Divide this difference by balance of the account.
4. If difference of the products is on same side of the account as its balance, average date is forward from focal date; if difference is on opposite side, average date is backward from focal date.

Compound Average Illustrated.—Assume the following account:

Debits		Credits	
June 15	$400	July 3 Cash	$300
" 25, 1 mo.	200	" 20 "	600
July 10	800		
" 28	100		
Aug. 5	200		

The most convenient focal date is May 31. The sum of the products of months and days for the debit items of the account are found thus:

Date of Transaction	Terms of Payment	Date in Average	Time Mos.	Time Days	Amount	Products Mos.	Products Days
June 15	....	June 15	0	15	$ 400	$ 0	$ 6,000
" 25	1 mo.	July 25	1	25	200	200	5,000
July 10	....	" 10	1	10	800	800	8,000
" 28	....	" 28	1	28	100	100	2,800
Aug. 5	....	Aug. 5	2	5	200	400	1,000
	Total debits				$1,700	$1,500	$22,800
						30 × $1,500 =	45,000
	Total debit products						$67,800

The sum of products of months and days for the credit items of the account is found thus:

Date of Transaction	Terms of Payment	Date in Average	Time Mos.	Time Days	Amount	Products Mos.	Products Days
July 3	Cash	July 3	1	3	$300	$300	$ 900
" 20	"	" 20	1	20	600	600	12,000
	Total credits				$900	$900	$12,900
					30 ×	$900 =	27,000
	Total credit products						$39,900

The account balance is a debit of $800, and the sum of the debit products exceeds the sum of the credit products by 27,900. The average date is forward from May 31, the focal date, as many days as 27,900 divided by 800, or approximately 35. July 5 is, therefore, the focal date.

THE EQUATED DATE.—The equated date is that at which the balance of an account is at a minimum. The account may have only debits, only credits, or both debits and credits. Some date is assumed as a balancing date. Usually either the earliest or the latest date in the problem is assumed. This is called the focal date. The account is balanced as of this date, and then we determine how may days out of the way this focal date is; and reckon backward or forward to the equated date.

Equated Date Illustrated—One-sided Account.—Determine the equated date of the following account at 6%, bankers' time:

Debits: July 13, $800; July 25, $400; Aug. 3, $175. The latest date is Aug. 3, which is the focal date.

Amount	Due	Time	Interest
$ 800	July 13	21 days	$2.80
400	" 25	9 "	.60
175	Aug. 3	0 "	.....
$1,375			$3.40

Since all items are debits, the balance is $1,375, and this is accruing interest at the rate of 23 cents a day. It has already accrued $3.40; therefore, interest has been accruing (3.40 ÷ .23), approximately 15 days. Figuring backwards, 15 days from Aug. 3, gives July 19 as the equated date. The result may be proved by balancing the account as of July 19, as follows:

Interest to July 19:		
$800 for 6 days		$0.80
Interest from July 19:		
$400 for 6 days	$0.40	
$175 for 15 days	0.40	$0.80

Valuation

VALUATION OF WASTING ASSETS.—Valuation as applied to wasting assets may refer either to a single unit or it may refer to various combinations of units of physical plant. Provision is made for the replacement of physical units of plant on the basis of their estimated life. If funds are to be accumulated on the basis of replacement cost rather than that of original cost, the amount to be accumulated may be either larger or smaller than original cost, depending on the trend of prices. Allowance must also be made for scrap value. Cost less scrap value is known as wearing value. This wearing value is the amount that must be accumulated if original cost is to be provided for in the provision for depreciation.

If the replacement fund is permitted to accumulate by compound interest, the equal annual instalments to this fund are determined by the following formula:

$$x = V\left(\frac{r-1}{r^n-1}\right)$$

in which V is the fund to be accumulated, r is the ratio of increase, and n is the number of years during which the fund is to accumulate.

Thus, if an asset cost $1,000, has an estimated life of 5 years, and an estimated scrap value of $50, and the fund is to accumulate at $3\frac{1}{2}\%$, the annual instalment is:

$$x = 950\left(\frac{1.035 - 1}{1.035^5 - 1}\right)$$
$$= \$177.157$$

A schedule showing the accumulation of the fund is given below:

Year	Yearly Payment	Interest on Fund	Yearly Addition	Total in Fund
1	$177.157		$177.157	$177.157
2	177.157	$ 6.201	183.358	360.515
3	177.157	12.618	189.775	550.291
4	177.157	19.260	196.418	746.708
5	177.157	26.135	203.292	950.000
	$885.785	$64.214	$950.000	

Theoretically, the amount in the fund shown in the last column is the measure of existing depreciation. This is, however, merely an assumption and the value of the assets in question should be checked up by any other available means.

VALUATION OF COMPOSITE PLANT.—When it is desired to ascertain a theoretical valuation of a plant as a whole, the depreciation must be figured on the various units of which the plant is composed. Thus, if a plant is composed of the following units having life and wearing value (cost less salvage) as shown below:

Unit	Life	Wearing Value	Yearly Charge
Building............	50	$40,000	$ 191.20
Engine..............	25	25,000	523.81
Boiler..............	20	10,000	302.43
Dynamo............	15	5,000	231.71
		$80,000	$1,249.15

then the yearly annual charge, on a 5% basis, is as shown in the last column. The rate of depreciation is the ratio of the yearly charge to the total wearing value, or $1,249.15 \div 80,000 = 1.5614\%$. This is low here because over long periods the interest item is a large factor.

The time required for the yearly additions to the depreciation fund to accumulate to the original wearing value of the plant is known as the composite life of the plant.

In the example above, $1,249.15 a year must accumulate a wearing value of $80,000. That is,

$$1,249.15 \times \frac{1.05^n - 1}{.05} = 80,000$$

Dividing both sides by 80,000, we have

$$\frac{1,249.15}{80,000} \times \frac{1.05^n - 1}{.05} = 1$$

But 1,249.15 ÷ 80,000 is d, the depreciation rate. We have, therefore,

$$d \times \frac{1.05^n - 1}{.05} = 1$$

$$\text{or, } 1.05^n - 1 = \frac{.05}{d}$$

Transposing 1 to right,

$$1.05^n = 1 + \frac{.05}{d}$$

Applying logs to both sides,

$$n \log 1.05 = \log\left(1 + \frac{.05}{d}\right)$$

$$\text{or,} \qquad n = \frac{\log\left(1 + \frac{.05}{d}\right)}{\log 1.05}$$

Rule.—To find the composite life, divide i by the rate of depreciation, add 1 and find the log; divide by the log of $(1 + i)$.

For the above problem $\frac{i}{d} = 3.202$

add 1 and find log .62346
log of 1 + .05 or 1.05 = .02119
.62346 ÷ .02119 = 29.4 years

The composite life of a plant should be known when bonds secured by a mortgage on plant and equipment are issued. Such bonds should not be issued for a term of years which exceeds the composite life of the plant. To provide a margin of safety the term of the bonds should be considerably shorter than the plant's composite life.

VALUATION OF MINES, TIMBER LANDS, ETC.—In case of permanent assets the value is determined by dividing the income by the income rate desired, expressed thus:

$$\text{Value} = \frac{R}{i}, \; R \text{ being the annual income}$$

When the asset possesses limited life provision must be made against the time when the rent or income will cease. This takes the form of a sinking fund payment, which may be regarded as an additional rate to be added to i and is expressed as i'. The formula then becomes:

$$\text{Value} = \frac{R}{\frac{1}{S_n}(\text{at rate } i') + i}$$

Rule.—To find the value of a mine, add the sinking fund charge at rate i' to the rate of interest i; divide the result into the periodic rent.

Valuation of Mines Illustrated.—A mine will produce a net income of \$25,000 a year for 40 years. Determine its value if the annual dividend rate is to be 7% payable annually and the sinking fund is to accumulate at 4%, interest annually.

$$\frac{1}{S}, \text{ 40 yr. at } 4\% = .01052349$$

$$i = .07$$

$$.01052349 + .07 = .08052349$$

$$25,000 \div .08052349 = \$310,468.41$$

CAPITALIZATION OF ASSETS.—It is sometimes desirable to find what sum of money is necessary to construct a building and keep it in repair for its estimated life. The cost of a perpetuity of 1 per annum is $\frac{1}{i}$ and the income from a sinking fund is $\frac{1}{S_n}$, where S_n is the amount of an ordinary annuity. The product of these is the cost of a series of yearly items representing upkeep and repairs.

Capitalization of Assets Illustrated.—What amount must be given to a hospital to enable it to construct a building having an original cost of $100,000, an estimated life of 60 years, and an estimated annual upkeep cost of $10,000, and enable the hospital to have on hand at the end of 60 years $100,000 to replace the building? Money returns 4%.

First cost	= $100,000.00
Renewals $100{,}000 \times \frac{1}{.04} \times .00424432$	= 10,610.80
Upkeep $\frac{10{,}000}{.04}$	= 250,000.00
Answer	= $360,618.80

The formula for the above is developed as follows:

Let $C\infty$ = the capitalized cost of the asset.
C = cost of building new.
n = life in years.
R = annual repair charge.
i = interest rate.
$\frac{R}{i}$ = annual repair charge capitalized.
$\frac{C}{i} \times \frac{1}{S_n}$ = renewal charges capitalized.

$$C\infty = C + \frac{C}{i} \times \frac{1}{S_n} + \frac{R}{i}$$

In the above illustration,

$$= 100{,}000 + \frac{100{,}000}{.04} \times .00424432 + \frac{10{,}000}{.04}$$

VALUATION OF BONDS.—The value of a bond is the sum of the present worths of the principal and coupons at compound interest for the period for which they respectively have to run, assuming a given rate of income on the money invested therein. If the purchaser buys at a price below this value, he will receive a higher rate of income than he anticipated. If he pays more, his return will be less than he anticipated.

There are two important fixed points in the history of a bond—the original investment and the par value or amount received by the owner at maturity. There occurs a gradual change between these two points. If the bond is purchased below par, the value rises to par. If the bond is purchased above par, the value falls to par. This change in value is the effect of two opposing forces, namely, the interest earned, which tends to increase the value, and the redemption of coupons, which tends to reduce it. The investment value of a bond can be computed at any time between date of issue and date of redemption. In accounting for investments the bonds should be entered at cost and should go out of the accounts at par, providing they are held until maturity. During the period between purchase and redemption there

should occur a gradual process of amortization or accumulation, according as the bond was purchased above or below par. The market value of a bond is of no significance from the accounting point of view.

NOMINAL AND EFFECTIVE INTEREST RATES.—The nominal or cash interest rate is the ratio of the dividend to the par value of the bond. The effective interest rate is the true income rate, which is a certain percentage of the amount originally invested or which remains invested at any given time. The former is sometimes known as the cash rate, the latter as the income rate.

BOND VALUATION—FIRST METHOD.—If a bond is purchased above or below par, the following elements must be considered in valuing it: (a) the par value; (b) the number of periods the bond has to run, designated by n; (c) an annuity of c per cent of par for n periods; (d) the ratio of increase, $1 + i$.

Illustration.—A bond bears a nominal rate of 6%, payable semiannually, runs 40 years (80 periods), and has a par of \$1,000. Required, to compute its value at the beginning of its first interest period.

This value consists of two parts: (1) the present worth of \$1,000 due 80 periods hence; and (2) the present worth of an annuity of \$30 for 80 periods. It is assumed that securities of this grade net 3% per period. This is ordinarily termed a 6% basis. The ratio of increase per period is 1.03.

First, find the present worth of the principal sum, \$1,000, due 80 periods hence at 3% per period. The present worth of \$1 due in 80 periods at 3% is \$0.0939771 (see table, p. 139); therefore, the present worth of \$1,000 due in 80 periods at 3% is 1,000 × \$0.0939771, or \$93.9771.

Next, find the present value of an annuity of \$30 for 80 periods at 3%. The present value of an annuity of \$1 for the same number of periods and the same rate is \$30.20076345. Therefore, the present value of an annuity of \$30 for the same number of periods and the same rate is 30 × \$30.20076345, or \$906.0229.

The two elements which constitute the value of the bond and their total are shown below:

Present worth of par due in 80 periods	\$ 93.9771
Present worth of coupons	906.0229
	\$1,000.0000

The result happens to be \$1,000 or par because the yield assumed is the same as the nominal rate. If we assume the yield to be $2\frac{1}{2}$% on bonds of this type each period, the result is as follows:

Present value of coupons	\$1,033.5545
Present worth of par due in 80 periods	138.7046
Value of bond	\$1,172.2591

BOND VALUATION—SECOND METHOD.—Assuming the same data as was used in the second illustration of the first method, each periodic payment of \$30 may be regarded as being composed of two parts, \$25 representing the income on the \$1,000 par value at the assumed rate of $2\frac{1}{2}$%, and \$5, which is an annuity over and above the income rate and the present worth of which is the premium that must be paid on the bond. The present value of an annuity of \$1 for 80 periods at $2\frac{1}{2}$% is \$34.45181722. The present value of an annuity of \$5 for the same number of periods and at the same rate

is $5 \times 34.45181722 = \$172.259086$. This added to the principal, \$1,000, gives \$1,172.26 as the present worth of the bond. This method is somewhat quicker than the first method.

BOND VALUATION—BOND SOLD BELOW PAR.—If the cash rate is less than the nominal rate, the value of the annuity should be subtracted from the par of the bond. Thus in the preceding illustration, if the nominal rate is changed to 3% and the cash rate to $2\frac{1}{2}$%, or \$25 per period, the present value of the annuity of \$5 for 80 periods at $2\frac{1}{2}$%, which is \$172.26, must be subtracted from par, \$1,000, which gives \$827.74 as the present value of the bond.

BOND AMORTIZATION AND ACCUMULATION.—A \$1,000 bond running 80 periods and bearing a nominal rate of 3% per period, but bought to yield $2\frac{1}{2}$%, is worth \$1,172.26. At the end of the first half-year or period the holder receives as true income $2\frac{1}{2}$% on \$1,172.26, or \$29.31. He collects, however, \$30, or 3% of \$1,000. Deducting the income, \$29.31, from the amount received, leaves \$0.69, which should be applied to amortize the premium. This leaves the value of the bond at the end of the first half-year $\$1{,}172.26-\$0.69 = \$1{,}171.57$. In this way the principal sum is reduced each period until at maturity it is just equal to par.

For accounting purposes it is desirable to construct a schedule of amortization which shows the extinction or amortization of the premium by the subtraction therefrom of the surplus interest. To illustrate, assume that a \$1,000 bond dated Jan. 1, 1920, having 2 years to run, and paying 3% semi-annually on par, is bought to yield an income of $2\frac{1}{2}$% semi-annually. The present worth of an annuity of \$1 for 4 periods at $2\frac{1}{2}$% is \$3.76197421; therefore, the present worth of an annuity of \$5 for the same number of periods and at the same rate of interest is $5 \times \$3.76197421 = \$18.809871$. The cost of the bond is $\$1{,}000 + \$18.81 = \$1{,}018.81$. A schedule of amortization for this bond is shown below:

Date	Interest Received 3%	True Income $2\frac{1}{2}$%	Amortization	Book Value	Par
Jan. 1, 1920				\$1,018.81	\$1,000.00
July 1, "	\$ 30.00	\$ 25.47	\$ 4.53	1,014.28	
Jan. 1, 1921	30.00	25.36	4.64	1,009.64	
July 1, "	30.00	25.24	4.76	1,004.88	
Jan. 1, 1922	30.00	25.12	4.88	1,000.00	
	\$120.00	\$101.19	\$18.81		

In practice the schedule will ordinarily be longer because of the longer terms of most bonds. Such a schedule is necessary for the proper accounting treatment of bonds. From this we determine the amount to "write off" the premium each half-year in order to reduce the book value to par at maturity. Thus, the entry as at July 1, 1920, is as follows:

Cash	\$30.00	
Bond		\$ 4.53
Income on Bond		25.47

and a similar entry is required at each interest date.

If the bond is purchased at a discount, the schedule is one of accumulation. Assume that a $1,000 bond, dated Jan. 1, 1920, having 2 years to run, and paying $2\frac{1}{2}\%$ semiannually, is bought to yield an income of 3% semiannually.

The present worth of an annuity of $1 for 4 periods at 3% is $3.7170984; therefore, the present worth of an annuity of $5 for the same number of periods and at the same rate of interest is $5 \times \$3.7170984 = \$18.585492$. The cost of the bond is $1,000 − $18.59 = $981.41. A schedule of accumulation for this bond is shown below.

Date	Interest Received $2\frac{1}{2}\%$	True Income 3%	Accumulation	Book Value	Par
Jan. 1, 1920				$981.41	$1,000.00
July 1, "	$ 25.00	$ 29.44	$ 4.44	985.85	
Jan. 1, 1921	25.00	29.58	4.58	990.43	
July 1, "	25.00	29.71	4.71	995.14	
Jan. 1, 1922	25.00	29.85	4.85	999.99	
	$100.00	$118.58	$18.58		

In the amortization schedule the total of the true income and amortization columns equals the total of the interest received column.

In the accumulation schedule the total of the true income column minus the total of the accumulation column equals the total of the interest received column.

The figures in the book value column correspond to the figures found in tables of bond values which are published in book form. Given the figures in this column or in the bond tables, the other figures can be derived by addition or subtraction. The amortization or the accumulation would be the difference between successive book values. The net income for any period would be found either by adding the accumulation to the total interest or by deducting the amortization from the total interest.

BONDS PURCHASED AT INTERMEDIATE DATES.—Ordinarily bonds are purchased between interest dates. It is then necessary to make certain adjustments in order to determine the price of the bond.

Rule.—Determine the price which would have been paid had the bond been purchased at the last preceding interest date; also that which would have to be paid at the next succeeding interest date. The difference between these prices is the premium or discount which would be amortized over the entire period between these two dates. Multiply this difference by the fraction of the period which precedes the date of purchase. The product is the premium or discount for this fractional period. If a premium, deduct it from the price at the last preceding interest date. If a discount, add it to this price. To the result add the accrued interest on the par value of the bond.

Illustration.—What should be paid for a $1,000 bond due in 4 years, 1 month, bearing 6% interest, and bought to net 4%?

Value 9 periods to maturity	$1,081.62
" 8 " " "	1,073.24
Premium amortized in 6 months	$ 8.38

Multiply by 5/6 fraction of period expired	5/6
Premium amortized in 5 months	$ 7.00
Price $4\frac{1}{2}$ years to maturity	$1,081.62
Deduct premium for 5 months	7.00
Value 4 years, 1 month before maturity (and int. price)	$1,074.62
Add interest for 5 months on $1,000 at 6%	25.00
Price including interest (flat price)	$1,099.62

What should be paid for a $1,000 bond due in 4 years, 1 month, bearing interest at 4%, and bought to yield 6%?

Value 8 periods to maturity	$929.80
" " " " "	922.14
Discount amortized in 6 months	$ 7.66
Multiply by 5/6 fraction of period expired	5/6
Discount amortized in 5 months	$ 6.35
Add value $4\frac{1}{2}$ years to maturity	922.14
	$928.49
Add accrued interest at 4% on $1,000 for 5 months	16.67
Price including interest	$945.16

BOND SUBJECT TO OPTIONAL REDEMPTION.—When bonds are subject to optional redemption by the debtor, this fact must be considered in determining what price to pay in order to secure a given return, if the bonds are bought at either a discount or a premium.

If the bonds are bought at a premium and the debtor has the right to redeem at par before maturity, the price paid should be based on the assumption that the right will be exercised. If the bonds are bought at a discount and are subject to redemption at par, it should be assumed that the right of redemption will not be exercised. If the bonds are bought at a discount and are subject to redemption before maturity at a premium, it should be assumed that the right of redemption will not be exercised. If the bonds are bought at a premium and are subject to redemption before maturity at a premium, it cannot be assumed that redemption will or will not be exercised. In this case the buyer should figure the price on two bases: (1) assuming that the bonds will run to maturity, and (2) assuming that the option to redeem will be exercised. He should pay the lower of the two prices.

Illustration.—A bond buyer desires to purchase a $1,000, 5% bond, due in 30 years, with the privilege of redemption in 20 years, at 115, in order to yield 4% on his investment.

If the option is exercised the value is computed as follows:

The present value of $1,150 due in 20 yr. at 4%, is $1,150 × .45638695 (present worth of $1, in 20 yr.)	$ 524.84

The value of the coupons is found thus:

Present value of 1 at 2% for 40 periods is .... .45289042
The compound discount is .... .54710958
.54710958 ÷ .02 = 27.355479 present value of an annuity of 1.

25×27.355479	683.89
Price, if option is exercised	\$1,208.73

If the bond runs to maturity, the value is computed as follows:

The present value of \$1,000 due in 30 yr. to yield 4%, is \$1,000 × .30831867 (present worth of \$1 in 30 yr.)	\$ 308.32
The value of the coupons is found thus:	
Present value of 1 at 2% for 60 periods is .30478227	
The compound discount is .69521773	
$.69521773 \div .02 = 34.760886$ present value of an annuity of 1.	
30×34.760886	1,042.83
Price, if bond runs to maturity	\$1,351.15

The buyer should assume that the option will be exercised and pay \$1,208.73.

LIFE-TENANT AND REMAINDERMAN.—When bonds are held in trust, they should be amortized unless there are testamentary instructions to the contrary. If a trustee invests \$54,217.50 in a 5% bond having 10 years to run, and pays the full amount of the coupons, as they fall due, to the life-tenant, the fund at the end of 10 years will amount to only \$50,000. The investment is on a 4% basis. The trustee should pay over to the life-tenant at the end of the first half-year 2% of \$54,217.50, or \$1,084.35; not 2½% of \$50,000, or \$1,250. Since the trustee receives \$1,250, he has to reinvest the difference between this and \$1,084.35, or \$165.65.

At the end of the next interest period the bond yields a net income of \$1,081.03. The life-tenant also receives the interest on \$165.65. If this has been invested at 4%, this interest amounts to \$3.31. The total amount due to the life-tenant is \$1,081.03 + \$3.31 = \$1,084.34. This is \$0.01 less than the income the first half-year. The difference between this \$1,084.34 and the coupons received is \$165.66, which is the amount to be amortized at the end of the second half-year. It must also be reinvested. The trustee's fund then stands thus:

Book value of bonds	\$53,886.19
Invested end of first half-year	165.65
Invested end of second half-year	165.66
Total in fund end of first year	\$54,217.50

The Appellate Division of the New York Supreme Court (38 App. Div. 419) has emphasized the fact that it is the trustee's duty to reserve the proper amount of interest to amortize the premium. In this decision the court said, in part:

"If one buys a ten-year five per cent bond at one hundred and twenty, the true income or interest the bond pays is not 4 1/6% on the amount invested, nor 5% on the face of the bond, but 2 7/10% on the investment, or 3 24/100% on the face of the bond. The matter is simply one of arithmetical calculation, and tables are readily accessible, showing the result of the computation."

BOND TABLES.—Bond tables show the value of bonds at various coupon rates, for various yields of net income, and for various periods of time to run. Bond tables usually are constructed for bonds whose coupons are payable semiannually. Usually values are found in supplementary tables for bonds whose coupons are payable quarterly or yearly. The following table, given here for illustrative purposes, is taken from Sprague's "Extended Bond Tables" (p. 80):

Values, to the nearest Cent, of a Bond for $1,000,000 at 5% Interest, payable semiannually

Net Income	3 Years	3½ Years	4 Years	4½ Years	5 Years
2 50	1 071 825 12	1 083 284 07	1 084 601 55	1 105 779 31	1 116 819 07
2 55	1 070 328 46	1 081 538 84	1 092 608 09	1 103 537 98	1 114 330 27
2 60	1 068 834 33	1 079 796 97	1 090 618 92	1 101 302 00	1 111 847 97
2 65	1 067 342 73	1 078 058 45	1 088 634 05	1 099 071 36	1 109 372 18
2 70	1 065 853 65	1 076 323 28	1 086 653 46	1 096 846 04	1 106 902 85
2 75	1 064 367 09	1 074 591 45	1 084 677 14	1 094 626 03	1 104 439 98
2 80	1 062 883 04	1 072 862 96	1 082 705 08	1 092 411 33	1 101 983 56
2 85	1 061 401 50	1 071 137 78	1 080 737 28	1 090 201 90	1 099 533 55
2 90	1 059 922 46	1 069 415 93	1 078 773 71	1 087 997 74	1 097 089 94
2 95	1 058 445 92	1 067 697 38	1 076 814 37	1 085 798 84	1 094 652 71
3 00	1 056 971 87	1 065 982 14	1 074 859 25	1 083 605 17	1 092 221 85
3 05	1 055 500 31	1 064 270 19	1 072 908 34	1 081 416 74	1 089 797 33
3 10	1 054 031 24	1 062 561 54	1 070 961 63	1 079 233 51	1 087 379 13
3 15	1 052 564 64	1 060 856 16	1 069 019 11	1 077 055 49	1 084 967 25
3 20	1 051 100 52	1 059 154 06	1 067 080 77	1 074 882 64	1 082 561 66
3 25	1 049 638 87	1 057 455 22	1 065 146 59	1 072 714 97	1 080 162 34
3 30	1 048 179 68	1 055 759 65	1 063 216 58	1 070 552 46	1 077 769 27
3 35	1 046 722 96	1 054 067 33	1 061 290 71	1 068 395 09	1 075 382 44
3 40	1 045 268 68	1 052 378 25	1 059 368 98	1 066 242 85	1 073 001 82
3 45	1 043 816 86	1 050 692 42	1 057 451 38	1 064 095 73	1 070 627 41
3 50	1 042 367 48	1 049 009 81	1 055 537 90	1 061 953 71	1 068 259 17
3 55	1 040 920 54	1 047 330 43	1 053 628 52	1 059 816 78	1 065 897 10
3 60	1 039 476 04	1 045 654 27	1 051 723 25	1 057 684 92	1 063 541 18
3 65	1 038 033 97	1 043 981 31	1 049 822 06	1 055 558 13	1 061 191 38
3 70	1 036 594 33	1 042 311 57	1 047 924 95	1 053 436 38	1 058 847 70
3 75	1 035 157 11	1 040 645 01	1 046 031 91	1 051 319 67	1 056 510 11
3 80	1 033 722 30	1 038 981 65	1 044 142 93	1 049 207 98	1 054 178 59
3 85	1 032 289 91	1 037 321 47	1 042 258 00	1 047 101 30	1 051 853 13
3 90	1 030 859 92	1 035 664 46	1 040 377 11	1 044 999 62	1 049 533 71
3 95	1 029 432 34	1 034 010 63	1 038 500 25	1 042 902 92	1 047 220 32
4 00	1 028 007 15	1 032 359 96	1 036 627 41	1 040 811 18	1 044 912 93
4 05	1 026 584 36	1 030 712 44	1 034 758 58	1 038 724 41	1 042 611 52
4 10	1 025 163 96	1 029 068 07	1 032 893 74	1 036 642 57	1 040 316 09
4 15	1 023 745 94	1 027 426 84	1 031 032 90	1 034 565 67	1 038 026 61
4 20	1 022 330 31	1 025 788 74	1 029 176 04	1 032 493 68	1 035 743 07
4 25	1 020 917 04	1 024 153 77	1 027 323 16	1 030 426 59	1 033 465 45
4 30	1 019 506 15	1 022 521 93	1 025 474 23	1 028 364 40	1 031 193 73
4 35	1 018 097 62	1 020 893 20	1 023 629 26	1 026 307 08	1 028 927 90
4 40	1 016 691 46	1 019 267 57	1 021 788 23	1 024 254 63	1 026 667 93
4 45	1 015 287 65	1 017 645 05	1 019 951 13	1 022 207 03	1 024 413 82
4 50	1 013 886 19	1 016 025 62	1 018 117 96	1 020 164 27	1 022 165 54
4 55	1 012 487 08	1 014 409 27	1 016 288 70	1 018 126 33	1 019 923 08
4 60	1 011 090 32	1 012 796 01	1 014 463 35	1 016 093 21	1 017 686 42
4 65	1 009 695 89	1 011 185 82	1 012 641 90	1 014 064 89	1 015 455 55
4 70	1 008 303 80	1 009 578 70	1 010 824 33	1 012 041 35	1 013 230 44
4 75	1 006 914 03	1 007 974 64	1 009 010 63	1 010 022 60	1 011 011 08
4 80	1 005 526 59	1 006 373 63	1 007 200 81	1 008 008 60	1 008 797 46
4 85	1 004 141 48	1 004 775 67	1 005 394 84	1 005 999 36	1 006 589 56
4 90	1 002 758 67	1 003 180 75	1 003 592 72	1 003 994 85	1 004 387 36
4 95	1 001 378 18	1 001 588 86	1 001 794 45	1 001 995 07	1 002 190 85
5 00	1 000 000 00	1 000 000 00	1 000 000 00	1 000 000 00	1 000 000 00

Practical Measurements and Tables

Linear Measure

Linear measures are employed in measuring distance and length.

12 inches (in.)	= 1 foot (ft.)
3 feet	= 1 yard (yd.)
$5\frac{1}{2}$ yards, or $16\frac{1}{2}$ feet	= 1 rod (rd.)
320 rods, or 5,280 feet	= 1 mile (mi.)

Sometimes the signs (′) and (″) are used in place of ft. and in., contractions for feet and inches. Thus, 3′ 4″ instead of 3 ft. 4 in.

Square Measure

Square measure is used in measuring surfaces.

144 square inches (sq. in.)	= 1 square foot (sq. ft.)
9 square feet	= 1 square yard (sq. yd.)
$30\frac{1}{4}$ square yards	= 1 square rod (sq. rd.)
160 square rods	= 1 acre (A)
640 acres	= 1 square mile (sq. mi.)
1 acre = 4,840 sq. yds.	= 43,560 sq. ft.

Cubic Measure

Cubic measure is used in measuring volumes.

1,728 cubic inches (cu. in.)	= 1 cubic foot (cu. ft.)
27 cubic feet	= 1 cubic yard (cu. yd.)
128 cubic feet	= 1 cord (cd.)

Dry Measure

2 pints (pt.)	= 1 quart (qt.)
8 quarts	= 1 peck (pk.)
4 pecks	= 1 bushel (bu.)

Liquid Measure

2 pints	= 1 quart
4 quarts	= 1 gallon
63 gallons	= 1 hogshead (hhd.)

A standard bushel contains 2,150.42 cubic inches.
A heaped bushel contains 2,747.715 cubic inches.

Avoirdupois Weight

16 ounces (oz.)	= 1 pound (lb.)
2,000 pounds	= 1 ton (T.)

Grain and Seeds

The number of pounds in a bushel of the following commodities are given below as used in most states of the United States. These weights are not, however, uniform in all states.

Corn (shelled)	56 lb.
Corn on cob	70 "
Corn (in husk or shuck)	72 "
Wheat	60 "
Oats	32 "
Rye	56 "
Barley	48 "
Flaxseed	56 lb.
Cloverseed	60 "
Beans	60 "
Bran	20 "
Peas	60 "
Timothy seed	45 "
Corn meal	48 "
Potatoes	60 "

Values of Foreign Coins

Country	Legal standard	Monetary unit	Value in terms of U. S. money	Remarks
Argentine Republic	Gold	Peso	$0.9648	Currency: Paper, normally convertible at 44 per cent of face value; now inconvertible.
Austria	Gold	Krone	.2026	
Belgium	Gold and silver	Franc	.1930	Member Latin Union; gold is actual standard.
Bolivia	Gold	Boliviano	.3893	12½ bolivianos equal 1 pound sterling.
Brazil	Gold	Milreis	.5462	Currency: Government paper normally convertible at 16 pence (=$0.3244) per milreis.
British Cols. in Australasia and Africa.	Gold	Pound sterling	4.8665	
British Honduras	Gold	Dollar	1.0000	
Bulgaria	Gold	Lev	.1930	
Canada	Gold	Dollar	1.0000	
Chile	Gold	Peso	.3650	Currency: Inconvertible paper.
China	Silver	Tael: Amoy	.8318	
		Canton	.8293	
		Cheefoo	.7955	
		Chin Kiang	.8125	
		Fuchau	.7694	
		Haikwan (customs)	.8463	The tael is a unit of weight; not a coin. The customs unit is the Haikwan tael. The values of other taels are based on their relation to the value of the Haikwan tael.
		Hankow	.7782	
		Kiaochow	.8060	
		Nankin	.8237	
		Niuchwang	.7800	The Yuan silver dollar of 100 cents is the monetary unit of the Chinese Republic; it is equivalent to .644+ of the Haikwan tael.
		Ningpo	.7997	
		Peking	.8109	
		Shanghai	.7598	
		Swatow	.7683	
		Takau	.8370	
		Tientsin	.8060	
		Dollar: Yuan	.5390	
		Hongkong	.5471	
		British	.5471	
		Mexican	.5511	Mexican silver pesos issued under Mexican decree of Nov. 13, 1918, are of silver content approximately 41% less than dollar here quoted; those issued under decree of Oct. 27, 1919, contain about 51% less silver.
Colombia	Gold	Peso	.9733	Currency: Government paper and gold.

Costa Rica	Gold	Colon	.4653	
Cuba	Gold	Peso	1.0000	
Denmark	Gold	Krone	.2680	
Ecuador	Gold	Sucre	.4867	
Egypt	Gold	Pound (100 piasters)	4.9431	British pound sterling is legal tender for 97½ piasters.
Finland	Gold	Markka	.1930	
France	Gold and silver	Franc	.1930	Member Latin Union; gold is actual standard.
Germany	Gold	Mark	.2382	
Great Britain	Gold	Pound sterling	4.8665	
Greece	Gold and silver	Drachma	.1930	Member Latin Union; gold is actual standard.
Guatemala	Silver	Peso	.5074	Currency: Inconvertible paper.
Haiti	Gold	Gourde	.2000	Currency: Inconvertible paper.
Honduras	Silver	Peso	.5074	Currency, bank notes.
India [British]	Gold	Mohur and sovereign	4.8665	The British sovereign and half sovereign are legal tender in India at 10 rupees per sovereign.
	Silver	Rupee	.2411	
Indo-China	Silver	Piaster	.5480	
Italy	Gold	Lira	.1930	Member Latin Union; gold is actual standard.
Japan	Gold	Yen	.4985	
Liberia	Gold	Dollar	1.0000	Currency: Depreciated silver token coins.
Mexico	Gold	Peso	.4985	
Netherlands	Gold	Guilder (florin)	.4020	
Newfoundland	Gold	Dollar	1.0000	
Nicaragua	Gold	Cordoba	1.0000	
Norway	Gold	Krone	.2680	
Panama	Gold	Balboa	1.0000	
Paraguay	Gold	Peso (Argentine)	.9648	Currency: Depreciated Paraguayan paper currency.
Persia	Silver	Kran	.0934	Currency: Silver circulating above its metallic value.
Peru	Gold	Libra	4.8665	
Philippine Islands	Gold	Peso	.5000	
Portugal	Gold	Escudo	1.0805	Currency: Inconvertible paper.
Rumania	Gold	Leu	.1930	
Russia	Gold	Ruble	.5146	
Salvador	Gold	Colon	.5000	
Santo Domingo	Gold	Dollar	1.0000	
Serbia	Gold	Dinar	.1930	
Siam	Gold	Tical	.3709	
Spain	Gold and silver	Peseta	.1930	Valuation is for gold peseta; currency is notes of the bank of Spain.
Straits Settlements	Gold	Dollar	.5678	
Sweden	Gold	Krona	.2680	
Switzerland	Gold	Franc	.1930	Member Latin Union; gold is actual standard.
Turkey	Gold	Piaster	.0440	(100 piasters equal to the Turkish £.)
Uruguay	Gold	Peso	1.0342	Currency: Inconvertible paper.
Venezuela	Gold	Bolivar	.1930	

Time

60 seconds (sec.)	= 1 minute (min.)
60 minutes	= 1 hour (hr.)
24 hours	= 1 day (da.)
365 days	= 1 common year (yr.)
366 days	= 1 leap year
100 years	= 1 century (cen.)

Days in the Months

1. January (Jan.)........31
2. February (Feb.)..28 or 29
3. March (Mar.).........31
4. April (Apr.)...........30
5. May..................31
6. June..................30
7. July..................31
8. August (Aug.)........31
9. September (Sept.).....30
10. October (Oct.).......31
11. November (Nov.).....30
12. December (Dec.)......31

Angles and Circles

60 seconds (″)	= 1 minute (′)
60 minutes	= 1 degree (°)
360 degrees	= 1 circumference

United States Money

10 mills	= 1 cent (c)
10 cents	= 1 dime
10 dimes	= 1 dollar ($)
10 dollars	= 1 eagle

Coins in use: copper, 1 cent; nickel, 5 cents; silver dime, quarter, half-dollar, and dollar; gold, $5, $10, and $20, or double eagle. The mill is not coined.

English Money

4 farthings (far.)	= 1 penny (*d.*)
12 pence	= 1 shilling (*s.*)
20 shillings	= 1 pound (£)
21 shillings	= 1 Guinea (*G.*)

Troy Weight

24 grains (gr.)	= 1 pennyweight (pwt.)
20 pennyweight	= 1 ounce (oz.)
12 ounces	= 1 pound (lb.)

Troy weight is used in weighing precious metals. The standard is the troy pound, containing 5,760 grains. The avoirdupois pound contains 7,000 grains. The amount of pure gold in an article is expressed in carats, 24 units being the standard. Eighteen carats means 18/24, or $\frac{3}{4}$, pure gold and 6/24, or $\frac{1}{4}$, alloy. In weighing diamonds the carat is $3\frac{1}{6}$ grains.

Apothecaries' Weight

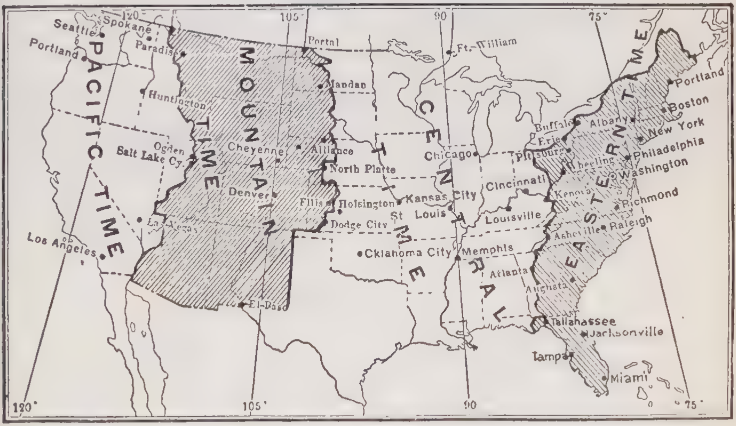
20 grains (gr.)	= 1 scruple (℈)
3 scruples	= 1 dram (ʒ)
8 drams	= 1 ounce (℥)
12 ounces	= 1 pound (lb.)

Relation between Longitude and Time

Time	Longitude	Longitude	Time
24 hr.	360°	360°	24 hr.
1 hr.	15°	1°	4 min.
1 min.	15′	1′	4 sec.
1 sec.	15″	1″	$\frac{1}{15}$ sec.

Standard Time

The earth's surface is divided into belts 15° wide, each being equal to 1 hour of time. The time in each belt is reckoned from a meridian extending about midway through the belt, so that the belt extends approximately $7\frac{1}{2}$° east and west of the meridian. In the United States and Canada the 75th, 90th, 105th, and 120th meridians have been adopted for this purpose, the four belts being the Eastern, Central, Mountain, and Pacific, as shown by the accompanying map.



Pacific Belt Mountain Belt Central Belt Eastern Belt

Standard Time in the United States

Counting

2 units	=1 pair (pr.)
6 units	=1 set, or half-doz.
12 units	=1 dozen
12 dozen	=1 gross
12 gross	=1 great gross
20 units	=1 score

Paper

24 sheets	=1 quire (qr.)
20 quires	=1 ream (rm.)
2 reams	=1 bundle (bdl.)
5 bundles	=1 bale (bl.)

Many paper mills, especially in the west, use 500 sheets to the ream, instead of 480.

Public Lands

In the older eastern sections of the United States no regular system of laying out public lands was adopted. According to a plan adopted later, a **base line** running east and west is surveyed, also a **principal meridian** cutting

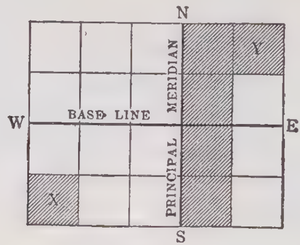


Fig. 1.

the base line at right angles. At intervals of 6 miles north and south of the base line and east and west of the principal meridian, lines parallel to these are drawn, forming areas 6 miles square. These are townships. A row of townships extending north and south is a **range.** These ranges are numbered east and west of the principal meridian, and north and south of the base

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Fig. 2.

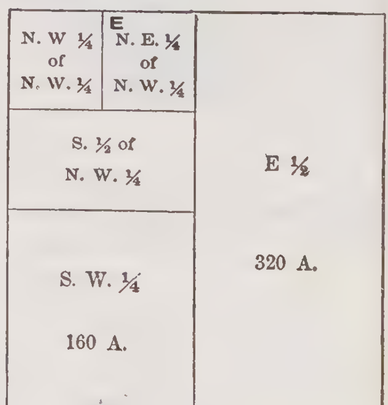


Fig. 3.

line. In Fig. 1, township X is designated T2S, R3W, or "Township 2 south, range 3 west." Township Y is T2N, R2E.

Each township contains 36 sections, each containing one square mile of area, or 640 acres. These sections are numbered as shown in Fig. 2.

Each section is divided into quarter sections, quarter sections into halves, fourths, etc., as shown in Fig. 3.

The Metric System

The metric system of weights and measures is based on the decimal system. It is in use in nearly all civilized countries. The United States and England are exceptions. It was officially adopted by the United States in 1866 but is as yet used only in scientific work. All units of measure and weight are based on the **meter,** which is the fundamental unit of the system. It is equal to one ten-millionth of the distance from the equator to the pole, or 39.37 in.

Linear Measure

10 millimeters (mm.)	= 1 centimeter (cm.)
10 centimeters	= 1 decimeter (dm.)
10 decimeters	= 1 **meter** (m.)
10 **meters**	= 1 decameter (Dm.)
10 decameters	= 1 hectometer (Hm.)
10 hectometers	= 1 kilometer (Km.)
10 kilometers	= 1 myriameter (Mm.)

Square Measure

100 square millimeters (sq. mm.)	= 1 square centimeter (sq. cm.)
100 square centimeters	= 1 square decimeter (sq. dm.)
100 square decimeters	= 1 **square meter** (sq. m.)
100 **square meters**	= 1 square decameter (sq. Dm.)
100 square decameters	= 1 square hectometer (sq. Hm.)
100 square hectometers	= 1 square kilometer (sq. Km.)

Land Measure

100 centares (ca.)	= 1 are (a.)	= 100 sq. m.
100 ares	= 1 hectare (Ha.)	= 10,000 sq. m.

Cubic Measure

1,000 cubic millimeters (cu. mm.)	= 1 cubic centimeter (cu. cm.)
1,000 cubic centimeters	= 1 cubic decimeter (cu. dm.)
1,000 cubic decimeters	= 1 cubic meter (cu. m.)

Wood Measure

10 decisteres (ds.)	= 1 stere (s.)	= 1 cu. m.
10 steres	= 1 decastere (Ds.)	= 10 cu. m.

Measure of Capacity

10 milliliters (ml.)	= 1 centiliter (cl.)
10 centiliters	= 1 deciliter (dl.)
10 deciliters	= 1 liter (l.)
10 liters	= 1 decaliter (Dl.)
10 decaliters	= 1 hectoliter (Hl.)
10 hectoliters	= 1 kiloliter (Kl.)

The liter is used for measuring liquids in ordinary quantities.
The centiliter or milliliter is used for measuring liquids in minute quantities
The hectoliter is used for measuring grain and vegetables.

Measure of Weight

10 milligrams (m.g.)	=1 centigram (cg.)
10 centigrams	=1 decigram (dg.)
10 decigrams	=1 gram (g.)
10 grams	=1 decagram (Dg.)
10 decagrams	=1 hectogram (Hg.)
10 hectograms	=1 kilogram (Kg.)
10 kilograms	=1 myriagram (Mg.)
10 myriagrams	=1 quintal (Q.)
10 quintals	=1 tonneau (T.)

The gram is the unit of weight. It is the weight of 1 cu. cm. of distilled water in a vacuum, at its greatest density (39.2°F.). It is equivalent to 15.4324 gr.

The gram is used to weigh drugs, letters, etc.

The kilogram is used to weigh merchandise; in large quantities the quintal and tonneau are used.

Tables of Equivalents

The following tables give equivalent values of both English and metric systems:

Linear Measure

1 inch	=2.54 centimeters	1 centimeter	=.3937 of an inch
1 foot	=.3048 of a meter	1 decimeter	=.328 of a foot
1 yard	=.9144 of a meter	1 meter	=1.0936 yards
1 rod	=5.029 meters	1 decameter	=1.9884 rods
1 mile	=1.6093 kilometers	1 kilometer	=.62137 of a mile

Surface Measure

1 sq. inch	=6.452 sq. centimeters	1 sq. centimeter	=.155 of a sq. inch
1 sq. foot	=.0929 of a sq. meter	1 sq. decimeter	=.1076 of a sq. foot
1 sq. yard	=.8361 of a sq. meter	1 sq. meter	=1.196 sq. yards
1 sq. rd.	=25.293 sq. meters	1 are	=3.954 sq. rods
1 acre	=40.47 ares	1 hectare	=2.471 acres
1 sq. mile	=259 hectares	1 sq. kilometer	=.3861 of a sq. mile

Cubic Measure

1 cu. inch	=16.387 cu. centimeters	1 cu. centimeter	=.061 of a cu. inch
1 cu. foot	=28.317 cu. decimeters	1 cu. decimeter	=.0353 of a cu. foot
1 cu. yard	=.7646 of a cu. meter	1 cu. meter	=1.308 cu. yards
1 cord	=3.624 steres	1 stere	=.2759 of a cord

Measures of Capacity

1 dry quart	=1.101 liters	1 liter	=.908 of a dry quart
1 liquid quart	=.9463 of a liter	1 liter	=1.0567 liquid qt.
1 liquid gallon	=.3785 of a decaliter	1 decaliter	=2.6417 liquid gal.
1 peck	=.881 of a decaliter	1 decaliter	=1.135 pecks
1 bushel	=.3524 of a hectoliter	1 hectoliter	=2.8377 bushels

Measures of Weight

1 grain, troy	=.0648 of a gram	1 gram	=15.432 grains, troy
1 ounce, troy	=31.104 grams	1 gram	=.03215 of an oz., troy
1 ounce, avoir.	=28.35 grams	1 gram	=.03527 of an oz., avoir.
1 lb., troy	=.3732 of a kilogram	1 kilogram	=2.679 lb., troy
1 lb., avoir.	=.4536 of a kilogram	1 kilogram	=2.2046 lb., avoir.
1 ton (short)	=.9072 of a tonneau or ton	1 tonneau	=1.1023 tons (short)

Convenient Equivalent Values

1 cu. cm. of water	=1 ml. of water, and weighs 1 gram	=15.432 gr.
1 cu. dm. of water	=1 l. of water, and weighs 1 Kg.	=2.2046 lb.
1 cu. m. of water	=1 Kl. of water, and weighs 1 tonneau	=2204.6 lb.

Mensuration

DEFINITION.—Mensuration treats of lines, surfaces, and solids and their measurements. Lines have one dimension—length. Surfaces have two dimensions—length and width. Solids have three dimensions—length, width, and thickness.

An **angle** is formed by two lines which meet.

A **right angle** is one formed by two lines which meet at an angle of 90 degrees.

A **polygon** is a plane surface bounded by straight lines.

A **quadrilateral** is a polygon bounded by four sides and having four angles.

A **parallelogram** is a quadrilateral whose opposite sides are parallel.

A **rectangle** is a parallelogram having right angles.

A **square** is a rectangle whose four sides are equal.

A **triangle** is a surface having three sides and three angles.

A **right-angled triangle** has one right angle. The side opposite the right angle is the **hypotenuse.**

An **isosceles triangle** has two of its sides equal.

An **equilateral triangle** has all sides and all angles equal.

A **circle** is a plane surface bounded by a curved line each point of which is equidistant with every other point thereof from an interior point known as the center. The bounding line is the **circumference.** The **diameter** is a straight line passing through the center and terminating at each end in the circumference. One-half the diameter is the **radius.**

The **perimeter** of a surface is the distance around it. Its **area** is the number of square units of area which it contains.

To find the area of a parallelogram: Multiply the base by the altitude.

To find the area of a triangle: Take one-half the product of the base and altitude.

To find the hypotenuse of a right triangle: Extract the square root of the sum of the squares of base and perpendicular.

To find base or perpendicular of a right-angle triangle: Extract the square root of the difference of the squares of the hypotenuse and the other given side.

To find the circumference of a circle: Multiply the diameter by 3.1416.

To find the diameter of a circle: Divide the circumference by 3.1416.

To find the area of a circle: Multiply the square of the diameter by .7854

Or, multiply the circumference by one-half the radius.

Or, multiply the square of the radius by 3.1416.

To find the diameter of a circle when the area is known: Divide the area by .7854 and extract the square root of the quotient.

To find the circumference of a circle when the area is known: Multiply the diameter by 3.1416. Find diameter from preceding rule.

A solid whose bases are equal polygons lying in parallel planes and whose sides are parallelograms is called a **prism.**

A prism having six equal square faces is a **cube.**

A solid whose bases are equal and parallel surfaces and whose surface is a uniform curve is a **cylinder.**

A **pyramid** is a solid whose base is a polygon and whose sides are triangles.

A **cone** is a solid whose base is a circle and whose surface tapers to a point.

To find the volume of a prism or cylinder: Multiply the area of the base by the altitude.

To find the surface of a right prism or cylinder: Multiply the perimeter of the base by the altitude. Add to the product the area of the bases.

To find the volume of a pyramid or cone: Take one-third of the product of the area of the base and the altitude.

To find the surface of a pyramid or cone: Multiply the perimeter of the base by one-half of the slant height. Add the area of the base.

The **areas** of similar surfaces are to each other as the squares of their like dimensions.

The **volumes** of similar solids are to each other as the cubes of their like dimensions.

To find the area of the surface of a sphere: equals the area of four great circles of the sphere. The area of a great circle is 3.1416 times the radius squared.

To find the volume of a sphere: Multiply the area of its surfaces by 1/3 of the radius.

Ratio and Proportion

DEFINITIONS.—Ratio of one quantity to a second similar quantity is the quotient obtained by dividing the first by the second. The colon (:) is the sign of ratio. Thus the ratio of 12 to 24 is expressed, 12 : 24. It is equivalent to $12 \div 24$, or $\frac{1}{2}$. The first term of a ratio is the **antecedent;** the second term is the **consequent.**

An equality of two ratios constitutes a **proportion.** The double colon (::) or (=) is the sign of proportion. Thus 12 : 24 :: 8 : 4 is read, 12 is to 24 as 8 is to 4. The extreme terms are the **extremes.** The second and third terms are the **means.** The first and third terms are the antecedents. The second and fourth terms are the consequents.

Progression

DEFINITIONS.—An **arithmetical progression** is a series of terms in which each succeeding term is obtained by adding a number, known as the **common difference,** to the preceding term. When the common difference is **positive,** the progression is **increasing.** When the common difference is **negative,** the progression is **decreasing.**

A **geometrical progression** is a series of terms in which each succeeding term is obtained by multiplying the preceding term by a constant amount, known as the **ratio.** When the ratio is greater than 1, the progression is ncreasing; when the ratio is less than 1, the progression is decreasing.

If the letters a, l, n, d, and s, denote respectively the first term, last term, number of terms, common difference, and sum of all the terms, then in an arithmetical progression,

$$(1) \qquad l = a + (n - 1)\,d$$

$$(2) \qquad s = \frac{n}{2}(a + l)$$

If the letters a, l, n, r, and s, denote respectively the first term, last term, number of terms, ratio, and sum of the terms of a geometrical progression,

$$(3) \qquad l = ar^{n-1}$$

$$(4) \qquad s = \frac{ar^n - a}{r - 1}$$

or

$$s = \frac{rl - a}{r - 1}$$

By means of formulas (1) and (2), any problem in arithmetical progression can be solved where any three of the quantities a, l, n, d, and s, are known.

By means of formulas (3) and (4), problems in geometrical progression can be solved. In some cases problems cannot be solved by these elementary processes. This is true when n is unknown, and usually when r is unknown.

Marking Goods

PROFIT BASED ON SELLING PRICE.—When goods are marked for resale, the percentage of profit may be added to cost, which consists of the invoice price plus freight and cartage, or it may be figured on sales. It is usually preferable to figure percentage of profit on sales, but this can be translated into a percentage on cost. The following table shows what percentage must be added to cost to arrive at a given percentage of profit on sales.

Profit Percentage Table

Add to Cost %	To Make on Selling Price %	Add to Cost %	To Make on Selling Price %
5	4¾	31.58	24
7½	7	33⅓	25
10.00	9	35.00	26
11.11	10	37½	27¼
12.36	11	40.00	28½
12½	11⅛	42.86	30
13.63	12	45.00	31
14.94	13	47.00	32
16.28	14	50.00	33⅓
16.43	14¼	53.85	35
17.65	15	55.00	35½
19.05	16	60.00	37½
20.00	16⅔	65.00	39½
20.49	17	66⅔	40
21.96	18	70.00	41
23.46	19	75.00	42¾
25.00	20	80.00	44½
26.58	21	85.00	46
28.21	22	90.00	47½
29.88	23	100.00	50

Illustration of Methods of Figuring Profit on Sales.—A merchant purchases a commodity for $1. His operating expenses are 20% of gross sales. He desires to make a net profit of 8%. What should be the selling price of the commodity?

Solution:

$$100 - (20 + 8) = 72\%$$
$$\$1 \div .72 = \$1.39 \textit{ answer}$$

Rule.—To the operating expense, add the net profit desired both expressed as percentage figures. Deduct this sum from 100%. Divide the cost of the article by the difference.

USE OF KEYS.—If both cost and selling prices are to be marked, use a separate key for each. The key may be any word or phrase containing ten letters, no two of which are alike. A repeater may be used when the same figure appears two or more times in succession in the price. This makes it more difficult for a customer to interpret the price.

Key to Cost Price.

E	S	R	O	H	K	C	A	L	B
1	2	3	4	5	6	7	8	9	0

Repeaters W and X

Key to Selling Price

N	O	T	S	E	L	R	A	H	C
1	2	3	4	5	6	7	8	9	0

Repeaters Y and Z

The words used are "black horse" and "Charleston" spelled backwards. Any letter other than those found in the key may be used as repeaters.

Illustration.—An article costs $5.27 and is to sell for $6.65. Placing the cost mark above and the selling price below, we have: $\frac{\text{H.SC}}{\text{L.ZE}}$.

Fire Insurance

DEFINITION.—**Insurance** is the agreement whereby, for a valuable consideration, one party agrees to indemnify another party for losses arising from specified causes.

The **premium** is the consideration paid by the party insured. It is expressed either as a per cent of the face of the policy or as a specified amount per $100.

The **term of insurance** is the length of time the policy of insurance runs, usually one or more years.

Fire insurance is the agreement to indemnify the insured against loss by fire.

The expression "loss by fire" means not only loss of property by actual contact with flames, but also loss resulting from water or chemicals used to extinquish the fire, also damages resulting from smoke. It includes losses from fire caused by lightning.

The "New York Standard (80%) Average Clause" provides, in part, that: "This company shall not be liable for a greater proportion of any loss or damage to the property described herein than the sum hereby insured bears to eighty per cent (80%) of the actual cash value of said property at the time such loss shall happen." The "Waiver Clause," also contained in the uniform policy adopted in Connecticut, New Jersey, New York, Pennsylvania, reads: "In case of loss if the value of the property described herein does not exceed $2,500, the 80% average or coinsurance clause shall be waived."

Under the **ordinary policy** the company pays any loss not in excess of the face of the policy.

Under a **valued policy** the value is specified; the company pays on the basis of this specified value.

Under the **open policy**, which is used to cover goods in storage, the amount of the policy varies as the quantity of goods is added to or decreased. These additions and withdrawals are recorded in an "Open Policy Book" kept by the company.

Fire insurance policies may be canceled by insurer or insured on 5 days' notice. If the insuring company cancels, it returns such portion of the premium as the unexpired term is of the whole term. If the insured cancels the policy, the company returns only the amount by which the premium paid exceeds the premium reckoned by the short rate, which is correspondingly higher for short periods of time. Following is the standard short-rate table used to compute premiums for terms less than 1 year, also to compute the amount of premium to be returned by the insurer when a policy is canceled by the insured.

Standard Short Rate Scale for Computing Premiums for Terms less than One Year, as adopted by the "Western Union"

Rule. Take the percentage indicated in scale opposite the number of days risk is to run, on the premium for one year at given rate, and the result will be the premium earned in case of cancellation, or to be charged in case of short risks.

1 day	2% annual premium		55 days		29% annual premium
2 days	4% " "		60 "		30% " "
3 "	5% " "		65 "		33% " "
4 "	6% " "		70 "		36% " "
5 "	7% " "		75 "		37% " "
6 "	8% " "		80 "		38% " "
7 "	9% " "		85 "		39% " "
8 "	9% " "		90 "	or 3 mo.	40% " "
9 "	10% " "		105 "		45% " "
10 "	10% " "		120 "	or 4 mo.	50% " "
11 "	11% " "		135 "		55% " "
12 "	12% " "		150 "	or 5 mo.	60% " "
13 "	13% " "		165 "		65% " "
14 "	13% " "		180 "	or 6 mo.	70% " "
15 "	14% " "		195 "		73% " "
16 "	14% " "		210 "	or 7 mo.	75% " "
17 "	15% " "		225 "		78% " "
18 "	16% " "		240 "	or 8 mo.	80% " "
19 "	16% " "		255 "		83% " "
20 "	17% " "		270 "	or 9 mo.	85% " "
25 "	19% " "		285 "		88% " "
30 "	20% " "		300 "	or 10 mo.	90% " "
35 "	23% " "		315 "		93% " "
40 "	26% " "		330 "	or 11 mo.	95% " "
45 "	27% " "		360 "	or 12 mo.	100% " "
50 "	28% " "				

Fire insurance problems require the application of principles of percentage. The value of the policy is the **base**. The rate of premium is the **rate**. The premium is the percentage.

TO FIND THE PREMIUM.—Divide the value of the policy by 100. Multiply the quotient by the rate.

Illustration.—Property is insured for $19,000 at a rate of 18 cents per $100 per annum. What is the annual premium?

$$\$19{,}000 \div 100 = 190$$
$$190 \times .18 = \$34.20 \quad \textit{answer}$$

TO FIND AMOUNT PAID BY INSURER.—Under an ordinary policy, the full amount of the loss up to the amount of the policy is paid.

Under a coinsurance policy, the portion of the loss paid is the ratio of the face of the policy to the value of the property.

Under the 80% average clause policy, that part of the loss is paid which is expressed by the ratio of the face of the policy to 80% of the value of the property.

Illustration.—Property having a value of $30,000 is insured for $20,000 at 3/8% per annum. Fire causes a loss of $15,000. Determine what would be paid by the insurer (1) under an ordinary policy, (2) under a coinsurance policy, (3) under the New York Standard (80%) Average Clause Policy.

(1) $15,000 under an ordinary policy.

(2) $$\frac{20{,}000}{30{,}000} = \frac{2}{3}$$

$\frac{2}{3}$ of $15,000 = $10,000 under a coinsurance policy.

(3) 80% of $30,000 = $24,000

$$\frac{20{,}000}{24{,}000} = \frac{5}{6}$$

$\frac{5}{6}$ of $15,000 = $12,500 under New York policy.

Domestic Exchange

DEFINITION.—Exchange consists in the payment of debts without the sending of money.

The following methods are employed:

1. Personal checks
2. Bank drafts
3. Postal money orders
4. Express money orders
5. Telegraphic money orders
6. Commercial drafts

Personal checks are a charge against the bank account of the maker and a credit to the bank account of the payee, when deposited. The checks issued by the maker are returned to his bank through the proper channels

Postal money order is an order issued by a post-office in one place against a post-office in some other place to pay a given sum to a designated person. The rates are:

For		$ 2.50 or less	$0.03	From	$30.01 to	$ 40	$0.15
From	2.51 to	$ 5.00	.05	"	40.01 "	50	.18
"	5.01 "	10.00	.08	"	50.01 "	60	.20
"	10.01 "	20.00	.10	"	60.01 "	75	.25
"	20.01 "	30.00	.12	"	75.01 "	100	.30

$100 is the largest amount for which a single postal money order is issued. In case of loss of postal money orders, duplicates can be secured from Washington, proper evidence being presented.

Express money orders are similar to postal money orders, being a written order by one express agent against another. $50 is the maximum amount of a single express money order. The same rates are charged as for postal money orders. They are transferable by indorsement.

Telegraphic money orders are useful when money must be sent quickly. The following table shows rates, the price including a 15-word message.

Table of Charges for Telegraph Money Orders*

For a Transfer of	To Any Place Where the 10-Word Telegram Rate Is							
	$.30	$.36	$.42	$.48	$.60	$.72	$.90	$1.20
$ 25.00 or less	$0.68	$0.74	$0.80	$0.91	$1.03	$1.22	$1.45	$1.88
25.01 to $ 50.00	.78	.84	.90	1.01	1.13	1.32	1.55	1.98
50.01 to 75.00	1.03	1.09	1.15	1.26	1.38	1.57	1.80	2.23
75.01 to 100.00	1.28	1.34	1.40	1.51	1.63	1.82	2.05	2.48
100.01 to 200.00	1.53	1.59	1.65	1.76	1.88	2.07	2.30	2.73
200.01 to 300.00	1.78	1.84	1.90	2.01	2.13	2.32	2.55	2.98
300.01 to 400.00	2.03	2.09	2.15	2.26	2.38	2.57	2.80	3.23
400.01 to 500.00	2.28	2.34	2.40	2.51	2.63	2.82	3.05	3.48
500.01 to 600.00	2.53	2.59	2.65	2.76	2.88	3.07	3.30	3.73
600.01 to 700.00	2.78	2.84	2.90	3.01	3.13	3.32	3.55	3.98
700.01 to 800.00	3.03	3.09	3.15	3.26	3.38	3.57	3.80	4.23
800.01 to 900.00	3.28	3.34	3.40	3.51	3.63	3.82	4.05	4.48
900.01 to 1,000.00	3.53	3.59	3.65	3.76	3.88	4.07	4.30	4.73
1,000.01 to 1,100.00	3.78	3.84	3.90	4.01	4.13	4.32	4.55	4.98
1,100.01 to 1,200.00	4.03	4.09	4.15	4.26	4.38	4.57	4.80	5.23
1,200.01 to 1,300.00	4.28	4.34	4.40	4.51	4.63	4.82	5.05	5.48
1,300.01 to 1,400.00	4.53	4.59	4.65	4.76	4.88	5.07	5.30	5.73
1,400.01 to 1,500.00	4.78	4.84	4.90	5.01	5.13	5.32	5.55	5.98
1,500.01 to 1,600.00	5.03	5.09	5.15	5.26	5.38	5.57	5.80	6.23
1,600.01 to 1,700.00	5.28	5.34	5.40	5.51	5.63	5.82	6.05	6.48
1,700.01 to 1,800.00	5.53	5.59	5.65	5.76	5.88	6.07	6.30	6.73
1,800.01 to 1,900.00	5.78	5.84	5.90	6.01	6.13	6.32	6.55	6.98
1,900.01 to 2,000.00	6.03	6.09	6.15	6.26	6.38	6.57	6.80	7.23
2,000.01 to 2,100.00	6.28	6.34	6.40	6.51	6.63	6.82	7.05	7.48
2,100.01 to 2,200.00	6.53	6.59	6.65	6.76	6.88	7.07	7.30	7.73
2,200.01 to 2,300.00	6.78	6.84	6.90	7.01	7.13	7.32	7.55	7.98
2,300.01 to 2,400.00	7.03	7.09	7.15	7.26	7.38	7.57	7.80	8.23
2,400.01 to 2,500.00	7.28	7.34	7.40	7.51	7.63	7.82	8.05	8.48
2,500.01 to 2,600.00	7.53	7.59	7.65	7.76	7.88	8.07	8.30	8.73
2,600.01 to 2,700.00	7.78	7.84	7.90	8.01	8.13	8.32	8.55	8.98
2,700.01 to 2,800.00	8.03	8.09	8.15	8.26	8.38	8.57	8.80	9.23
2,800.01 to 2,900.00	8.28	8.34	8.40	8.51	8.63	8.82	9.05	9.48
2,900.01 to 3,000.00	8.53	8.59	8.65	8.76	8.88	9.07	9.30	9.73

$3,000.00 and up add $.20 for each additional $100 or fraction thereof to the charges for $3,000.

*A business or personal message may be included in the transfer at a small additional cost.

A **commercial draft** is an order drawn by a creditor against a debtor, ordering him to pay a sum of money to the drawer or a third person. Com-

mercial drafts are frequently used in connection with bills of lading, it being necessary for the consignee to make payment to the local bank to which the bill of lading with sight draft attached is sent (or to accept, if a time draft) in order to secure the bill of lading. Time drafts may be discounted by the holder.

The **maker** or **drawer** is the person who signs the draft.

The **payee** is the person to whom the amount specified in the draft is to be paid.

The **drawee** is the person who is to pay the draft.

Par is the face value.

Premium is the excess above face value paid for a draft.

Discount is the amount below par at which drafts are sometimes purchased.

Exchange is a charge made by a bank when paying checks issued on banks located in other cities, to cover expense of collection. The charge is usually less than 20 cents.

A **bank draft** is a draft drawn by one bank against another. It is usually more acceptable than a personal check, and the expense of collection is less. Banks make a charge for drafts to cover exchange costs—usually 1/10% with a minimum charge of 10 cents.

Bank Discount

DEFINITION.—Bank discount is a deduction from the face value of notes and drafts made in consideration of buying them before maturity.

The **discount** is the simple interest on the face of the draft from day of discount to day of maturity.

The **proceeds** is the difference between the face amount and the discount.

TIME BASIS FOR COMPUTING DISCOUNT.—Banks usually charge interest and discount for the exact number of days from day of discount to day of maturity.

The following table is used by bankers to find the number of days between two dates.

Bankers' Time Table

From Any Day of	To the Same Day of the Next											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Jan.	365	31	59	90	120	151	181	212	243	273	304	334
Feb.	334	365	28	59	89	120	150	181	212	242	273	303
Mar.	306	337	365	31	61	92	122	153	184	214	245	275
Apr.	275	306	334	365	30	61	91	122	153	183	214	244
May	245	276	304	335	365	31	61	92	123	153	184	214
June	214	245	273	304	334	365	30	61	92	122	153	183
July	184	215	243	274	304	335	365	31	62	92	123	153
Aug.	153	184	212	243	273	304	334	365	31	61	92	122
Sept.	122	153	181	212	242	273	303	334	365	30	61	91
Oct.	92	123	151	182	212	243	273	304	335	365	31	61
Nov.	61	92	120	151	181	212	242	273	304	334	365	30
Dec.	31	62	90	121	151	182	212	243	274	304	335	365

In Arkansas, Kentucky, Louisiana, Maryland, Missouri (in large cities), North Carolina, Pennsylvania, Utah, and Virginia, both the day of discount and the day of maturity are included in the term of discount.

In all states except Mississippi and Texas, commercial instruments falling due on Sunday or a legal holiday are payable on the succeeding business day. In Mississippi and Texas they are payable on the preceding business day.

The 3 **days of grace** allowed beyond the time fixed for payment in a commercial instrument have now been abolished in most states.

Use of Table.—To find number of days from given day of one month to same day of a following month, follow line of given month to the right until column of same month is reached. Thus from Sept. 22 to Jan. 22 is 122 days. When the days are not the same, find time to same day in later month, then add or subtract according as day in later month is earlier or later than day in earlier month. Thus, to find number of days from July 5 to Sept. 20, find number of days from July 5 to Sept. 5, or 62, and add 15, which gives 77 days.

BANK DISCOUNT ILLUSTRATED.—Find proceeds of a 90-day note of $4,600 dated June 6, 1922, discounted July 3, 1922, at 6%. Collection 1/10%.

June 6 plus 90 days is Sept. 4, the due date.
July 3 to Sept. 4 is 63 days, the term of discount.

Discount	for	60 days	is	$46.00
"	"	3 "	"	2.30
"	"	63 "	"	$48.30

1/10% of $4,600 = $ 4.60 collection charge.
$48.30 + 4.60 = 52.90 bank's total charge.
$4,600 − 52.90 = $4,547.10 proceeds.

Find the proceeds of a 3 months' note of $4,000 bearing interest at 6% dated May 10, 1922, and discounted June 12, 1922, at 6%. Collection 1/10%.

May 10 plus 3 mos. is Aug. 10, due date.
June 12 to Aug. 10 is 59 days, the term of discount.

Interest for 3 mos.	=	$60.
$4,000 + $60	=	$4,060, value of note at maturity.
$40.60	=	discount for 60 days.
.68	=	" " 1 day.
$39.92	=	" " 59 days.
1/10% of $4,060	=	$4.06 collection charge.
$39.92 + $4.06	=	$43.98.
$4,060 − $43.98	=	$4,016.02 proceeds.

True Discount and Present Worth

DEFINITIONS.—True discount is the difference between present worth of a debt and its amount at maturity. Present worth is a sum of money which put at interest would amount to the debt at maturity.

Rule.—To find the present worth of a sum of money due at a given future date, divide the sum by the amount of $1 for the given time at the given rate of interest

Illustration.—What is the present worth of \$100 due in 4 months, interest at 6%?

$\$1 + \$0.02 = \$1.02$ amount of \$1 in 4 mo., interest at 6%.
$\$100 \div \$1.02 = \$98.04$ present worth.
$\$100 - \$98.04 = \$1.96$ true discount.

Partial Payments

DEFINITION.—A partial payment is the payment of part of an obligation.

When interest-bearing notes have more than 1 year to run, the United States Rule is generally applied. It is:

Rule.—1. A payment must first be applied against accrued interest. If it exceeds interest due, the excess should be applied to reduce the principal.

2. Interest must be charged upon interest.

When the time is less than 1 year, the Merchants' Rule is frequently used. It is:

Rule.—1. The face of a note draws interest from date to date of settlement.

2. Each payment draws interest from its date to date of settlement.

Commission and Brokerage

DEFINITIONS.—A **commission merchant** is one who buys and sells goods for another person, called **principal.** A rate per cent, known as **commission** or brokerage, is charged by the commission merchant. A principal who consigns a shipment of goods to a commission merchant is a **consignor,** and the merchant to whom the shipment is made is a **consignee.** The shipment is a **consignment.**

The principles of percentage apply in commission.

Gross sales is the **base.**
Rate of commission is the **rate.**
Commission is the **percentage.**
Net proceeds is the **difference.**
Gross cost is the **amount.**

Illustration.—A sale amounts to \$5,500. Commission is 4%. Find amount of commission, also net proceeds.

4% of \$5,500 = \$220 commission
$\$5,500 - \$220 = \$5,280$ net proceeds

Trade Discount

DEFINITION.—A **trade discount** is a deduction made from a list price to meet market requirements. Trade discounts are used to avoid the frequent publication of revised catalogs. As the market price increases, the discounts allowed are reduced, and vice versa. When two or more discounts are allowed, they are known as a discount series. Discount terms are printed on invoices.

Illustration.—A bill is for \$750, less 33 1/3%, 25% and 10%.

$\$750 - (33\ 1/3 \times 750) = \$500$
$\$500 - (.25 \times 500) = \$375$
$\$375 - (.10 \times 375) = \$337.50$ the net amount

Short-Cuts and Checks

ADDITION BY COLUMNS.—Add each column separately, beginning at the right, placing each result by itself. Then add the totals. Repeat the process, beginning at the left.

Illustration.—

$$
\begin{array}{r}
2175\\
5490\\
6312\\
5865\\
\hline
12\\[-2pt]
\end{array}
$$

$$
\begin{array}{rr}
2175 & 2175\\
5490 & 5490\\
6312 & 6312\\
5865 & 5865\\
\hline
12 & 18\\
23 & 16\\
16 & 23\\
18 & 12\\
\hline
19842 & 19842
\end{array}
$$

"**CASTING OUT 9'S.**"—Add the digits in each number, and divide the sum by 9. Place the remainders to the right of the number. Repeat for all numbers. Find the excesses of 9 in both the remainders and in the total. The results should be the same.

Illustration.—

$$
\begin{array}{rc}
2175 & 6\\
5490 & 0\\
6312 & 3\\
5865 & 6\\
\hline
19842 & 6\\
6 &
\end{array}
$$

SUBTRACTION OF EXCESSES OF 9'S.—Cast out 9's in minuend and subtrahend, and find the difference between the results. This should agree with excess of 9's in the remainder.

Illustration.—

$$
\begin{array}{rc}
465 & 6\\
122 & 5\\
\hline
343 & 1\\
1 &
\end{array}
$$

CASTING OUT 9'S IN MULTIPLICATION.—Find excesses of 9's in multiplier and in multiplicand. The product of these excesses should equal the excesses of 9's in the product.

Illustration.—

$$
\begin{array}{rc}
465 & 6\\
122 & 5\\
\hline
930 & 30\\
930 & \\
465 & \\
\hline
56730 &
\end{array}
$$

$3 = 3$

MULTIPLICATION BY MULTIPLES OF 10.—Move the decimal point to the right as many points as there are 0's in the multiplier.

MULTIPLICATION OF NUMBERS ENDING WITH ZEROS.—Multiply the significant figures. Add as many zeros as there are in both multiplier and multiplicand.

MULTIPLICATION BY 9, 99, 999, ETC.—First multiply by 10, or 100, or 1,000, etc. Subtract original numbers from the result.

MULTIPLICATION BY 25, 50, 75, ETC.—To multiply by 25, first multiply by 100; then divide by 4. To multiply by 50, first multiply by 100; then divide by 2. To multiply by 75, first multiply by 100, then divide by 4, and subtract this quotient from the product.

TO DIVIDE BY 10, 100, 1,000, ETC.—Move the decimal places to the left as many points as there are 0's in the divisor.

TO DIVIDE BY 25, 50, 75, ETC.—To divide by 25, divide by 100; then multiply by 4. To divide by 50, divide by 100; then multiply by 2. To divide by 75, divide by 100; then increase the quotient by 1/3 of itself.

CASTING OUT 9'S IN DIVISION.—Find excesses of 9's in the dividend, divisor, quotient, and remainder. Excesses in dividend equals excesses in remainder + excesses in product of excesses of divisor and quotient.

Illustration.—$6{,}793 \div 147 = 46$, and a remainder of 31.

Excesses of 9's in	$6{,}793 = 7$
" " " "	$147 = 3$
" " " "	$46 = 1$
" " " "	$31 = 4$
	$3 \times 1 = 3$
Excesses of 9's in	$3 = 3$
	$4 + 3 = 7$

Involution and Evolution

DEFINITIONS.—**Involution** is the process of finding powers of numbers. The second power of a number is known as its **square;** the third power, as its **cube.** 16 is the square, and 64 is the cube, of 4.

Evolution is the process of finding **roots** of numbers. The **square root** of 16 is 4; the **cube root** of 64 is 4. The sign ($\sqrt{\ }$) placed before a number indicates that its root is to be found. $\sqrt{4}$ reads, the square root of 4. $\sqrt[3]{64}$ reads, the cube root of 64.

TO FIND THE SQUARE ROOT.—1. Point off the given number into periods of two figures each proceeding in either direction from units place.

2. Find the greatest square in the first period on the left; place its root on the right, like a quotient in division; subtract the square from the period, and to the remainder bring down the next period for a dividend.

3. Double the root found, and place it on the left of the dividend for a trial divisor. Find how many times the trial divisor is contained in the dividend, exclusive of the right-hand figure; place the quotient in the root, and also on the right of the trial divisor.

4. Multiply the complete divisor by the last figure of the root; subtract the product from the dividend, and to the remainder bring down the next period for a new dividend.

5. Double the whole root found, for a new trial divisor, and continue the operation in the same manner until all the periods are brought down.

Illustration.—Extract the square root of 389.745. Point off 389.745 into periods of two figures each, by placing a point over 9, then over 3 to the left, then over 4 and 0 to the right. Proceed according to rule as per example.

$$
\begin{array}{rl}
 & \dot{3}8\dot{9}.7\dot{4}5\dot{0}\ (19.74+ \\
 & 1 \\ \hline
29) & 289 \\
 & 261 \\ \hline
387) & 2874 \\
 & 2709 \\ \hline
3944) & 16550 \\
 & 15776 \\ \hline
 & 774
\end{array}
$$

In case the divisor multiplied by the last figure in the root exceeds the dividend, reduce the last root figure until this product does not exceed it.

TO FIND THE CUBE ROOT.—1. Point off the given number into periods of three figures each, proceeding in either direction from units place.

2. Find the greatest cube in the first period on the left; place its root on the right, like a quotient in division; subtract the cube from the period, and to the remainder bring down the next period for a dividend.

3. Square the root found, and multiply it by 300 for a trial divisor. Find how many times the trial divisor is contained in the dividend, and place the quotient in the root.

4. Multiply the preceding figure, or figures, of the root by the last and by 30, and square the last figure; add the products to the trial divisor; the sum is the complete divisor.

5. Multiply the complete divisor by the last figure of the root; subtract the product from the dividend, and to the remainder bring down the next period for a new dividend.

6. Find a new trial divisor as before, and continue the operation in the same manner until all the periods are brought down.

Illustration.—Extract the cube root of 399.745.

		$39\dot{9}.74\dot{5}00\dot{0}$ (7.36+
		343
$7 \times 7 \times 300 =$	14 700	56 745
$7 \times 3 \times 30 =$	630	
$3 \times 3 =$	9	
	15 339	46 017
$73 \times 73 \times 300 =$	1598 700	10 728000
$73 \times 6 =$	438	
$6 \times 6 =$	36	
	1599 174	9 595044
		1 132956

Anticipation

USE OF TERM.—This is a customary term used in retail business in connection with invoices for purchases which have **dating terms.** Thus, a bill of merchandise is purchased at 2%, 10 days, 90 days extra. If merchandise is received within 10 days from date of invoice, most concerns permit the purchaser to take additional discount at the rate of, say, 6% per annum for 90 days, equivalent to $1\frac{1}{2}$%, in addition to 2% cash discount.

ANTICIPATION RATES ILLUSTRATED.[8]—In computing **anticipation on invoices**, the table on the following pages will be of assistance. The annual rates have been reduced to a daily basis.

This table is based upon 365 days to the year and covers annual anticipation rates from 1% to 10% inclusive, covering periods from 1 to 90 days.

The figures shown opposite the various number of days is the per cent applicable to the respective period, based upon the annual percentage shown at the top of the column.

Invoice dated Mar. 31 for $4,750.90, terms 2%, 10 days, 90 days extra, f.o.b. destination, paid on Apr. 26.

Invoice....................	$4,750.90
Less: Freight..............	30.40
	$4,720.50
Less: Discount 2%.........	94.41
	$4,626.09
Less: Anticipation 6% for 73 days (1.2%, see table)	55.51
Amount of check...............	$4,570.58

The 1.2% anticipation shown above is taken from the table against 73 days and under the 6% column.

It is the custom with some stores to compute the discount on the face of the invoice and the anticipation on the net amount after deducting the discount; then deducting the freight charges. This plan, which favors the purchaser, is illustrated below:

Using the same example as shown above, namely, invoice dated Mar. 31 for $4,750.90, terms 2%, 10 days, 90 days extra, f.o.b. destination, paid on Apr. 27, the computations are as follows:

Invoice....................	$4,750.90
Less: Discount 2%.........	95.02
	$4,655.88
Less: Anticipation 6% for 73 days (1.2%, see table)	55.87
	$4,600.01
Less: Freight..............	30.40
	$4,569.61

[8]Adapted from publications of the Controllers' Congress of National Retail Dry Goods Association.

Anticipation Rates and Percentages

Per Annum Rates

Days	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	.00274	.00548	.00822	.01096	.01370	.01644	.01918	.02192	.02466	.02740
2	.00548	.01096	.01644	.02192	.02740	.03288	.03836	.04384	.04932	.05479
3	.00822	.01644	.02466	.03288	.04110	.04932	.05753	.06575	.07397	.08219
4	.01096	.02192	.03288	.04384	.05479	.06575	.07671	.08767	.09863	.10959
5	.01370	.02740	.04110	.05479	.06849	.08219	.09589	.10959	.12329	.13699
6	.01644	.03288	.04932	.06575	.08219	.09863	.11507	.13151	.14795	.16438
7	.01918	.03836	.05753	.07671	.09589	.11507	.13425	.15342	.17260	.19178
8	.02192	.04384	.06575	.08767	.10959	.13151	.15342	.17534	.19726	.21918
9	.02466	.04932	.07397	.09863	.12329	.14795	.17260	.19726	.22192	.24658
10	.02740	.05479	.08219	.10959	.13699	.16438	.19178	.21918	.24658	.27397
11	.03014	.06027	.09041	.12055	.15068	.18082	.21096	.24110	.27123	.30137
12	.03288	.06575	.09863	.13151	.16438	.19726	.23014	.26301	.29589	.32877
13	.03562	.07123	.10685	.14247	.17808	.21370	.24932	.28493	.32055	.35616
14	.03836	.07671	.11507	15342	.19178	.23014	.26849	.30685	.34521	.38356
15	.04110	.08219	.12329	.16438	.20548	.24658	.28767	.32877	.36986	.41096
16	.04384	.08767	.13151	.17534	.21918	.26301	.30685	.35068	.39452	.43836
17	.04658	.09315	.13973	.18630	.23288	.27945	.32603	.37260	.41918	.46575
18	.04932	.09863	.14795	.19726	.24658	.29589	.34521	.39452	.44384	.49315
19	.05205	.10411	.15616	.20822	.26027	.31233	.36438	.41644	.46849	.52055
20	.05479	.10959	.16438	.21918	.27397	.32877	.38356	.43836	.49315	.54795
21	.05753	.11507	.17260	.23014	.28767	.34521	.40274	.46027	.51781	.57534
22	.06027	.12055	.18082	.24110	.30137	.36164	.42192	.48219	.54247	.60274
23	.06301	.12603	.18904	.25205	.31507	.37808	.44110	.50411	.56712	.63014
24	.06575	.13151	.19726	.26301	.32877	.39452	.46027	.52603	.59178	.65753
25	.06849	.13699	.20548	.27397	.34247	.41096	.47945	.54795	61644	.68493
26	.07123	.14247	.21370	.28493	.35616	.42740	.49863	.56986	.64110	.71233
27	.07397	.14795	.22192	.29589	.36986	.44384	.51781	.59178	.66575	.73973
28	.07671	.15342	.23014	.30685	.38356	.46027	.53699	.61370	.69041	.76712
29	.07945	.15890	.23836	.31781	.39726	.47671	.55616	.63562	.71507	.79452
30	.08219	.16438	.24658	.32877	.41096	.49315	.57534	.65753	73973	.82192
31	.08493	.16986	.25479	.33973	.42466	.50959	.59452	.67945	.76438	.84932
32	.08767	.17534	.26301	.35068	.43836	.52603	.61370	.70137	.78904	.87671
33	.09041	.18082	.27123	.36164	.45205	.54247	.63288	.72329	.81370	.90411
34	.09315	.18630	.27945	.37260	46575	.55890	.65205	.74521	.83836	.93151
35	.09589	.19178	.28767	.38356	.47945	.57534	.67123	.76712	.86301	.95890
36	.09863	.19726	.29589	.39452	.49315	.59178	.69041	.78904	.88767	.98630
37	.10137	.20274	.30411	.40548	.50685	.60822	.70959	.81096	91233	1.01370
38	.10411	.20822	.31233	.41644	.52055	.62466	.72877	.83288	.93699	1.04110
39	.10685	.21370	.32055	.42740	.53425	.64110	.74795	.85479	.96164	1.06849
40	.10959	.21918	.32877	.43836	.54795	.65753	.76712	.87671	.98630	1.09589
41	.11233	.22466	.33699	.44932	.56164	.67397	.78630	.89863	1.01096	1.12329
42	.11507	.23014	.34521	.46027	.57534	.69041	.80548	.92055	1.03562	1.15068
43	.11781	.23562	.35342	.47123	.58904	.70685	.82466	.94247	1.06028	1.17808
44	.12055	.24110	.36164	.48219	.60274	.72329	.84384	.96438	1.08493	1.20548
45	.12329	.24658	.36986	.49315	.61644	.73973	.86301	.98630	1.10959	1.23288
46	.12603	.25205	.37808	.50411	.63014	.75616	.88219	1.00821	1.13424	1.26027
47	.12877	.25753	.38630	.51507	.64384	.77260	.90137	1.03013	1.15890	1.28767
48	.13151	.26301	.39452	.52603	.65753	.78904	.92055	1.05205	1.18356	1.31506
49	.13425	.26849	.40274	.53699	.67123	.80548	.93973	1.07397	1.20821	1.34246
50	.13699	.27397	.41096	.54795	.68493	.82192	.95890	1.09589	1.23287	1.36986

Anticipation Rates and Percentages—Continued

PER ANNUM RATES

Days	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
51	.13973	.27945	.41918	.55890	.69863	.83836	.97808	1.11780	1.25753	1.39726
52	.14247	.28493	.42740	.56986	.71233	.85479	.99726	1.14146	1.28219	1.42465
53	.14521	.29041	.43562	.58082	.72603	.87123	1.01643	1.16164	1.30684	1.45205
54	.14795	.29589	.44384	.59178	.73973	.88767	1.03561	1.18356	1.33150	1.47945
55	.15068	.30137	.45205	.60274	.75342	.90411	1.05479	1.20547	1.35616	1.50684
56	.15342	.30685	.46027	.61370	.76712	.92055	1.07397	1.22739	1.38082	1.53424
57	.15616	.31233	.48649	.62466	.78082	.93699	1.09315	1.24931	1.40547	1.56164
58	.15890	.31781	.47671	.63562	.79452	.95342	1.11232	1.27123	1.43013	1.58904
59	.16164	.32329	.48493	.64658	.80822	.96986	1.13150	1.29315	1.45479	1.61643
60	.16438	.32877	.49315	.65753	.82192	.98630	1.15068	1.31506	1.47945	1.64383
61	.16712	.33425	.50137	.66849	.83562	1.00274	1.16986	1.33698	1.50410	1.67123
62	.16986	.33973	.50959	.67945	.84932	1.01918	1.18904	1.35890	1.52876	1.69863
63	.17260	.34521	.51781	.69041	.86301	1.03562	1.20821	1.38082	1.55342	1.72602
64	.17534	.35068	.52603	.70137	.87671	1.05205	1.22739	1.40273	1.57808	1.75342
65	.17808	.35616	.53425	.71233	.89041	1.06849	1.24657	1.42465	1.60273	1.78082
66	.18082	.36164	.54247	.72329	.90411	1.08493	1.26573	1.44657	1.62739	1.80821
67	.18356	.36712	.55068	.73425	.91781	1.10137	1.28493	1.46849	1.65205	1.83561
68	.18630	.37260	.55890	.74521	.93151	1.11781	1.30410	1.49041	1.67671	1.86301
69	.18904	.37808	.56712	.75616	.94521	1.23425	1.32328	1.51231	1.70136	1.89041
70	.19178	.38356	.57534	.76712	.95890	1.15068	1.34246	1.53424	1.72602	1.91780
71	.19452	.38904	.58356	.77808	.97260	1.16712	1.36164	1.55616	1.75068	1.94520
72	.19726	.39452	.59178	.78904	.98630	1.18356	1.38082	1.57808	1.77534	1.97260
73	.20000	.40000	.60000	.80000	1.00000	1.20000	1.40000	1.60000	1.80000	2.00000
74	.20274	.40548	.60822	.81096	1.01370	1.21644	1.41917	1.62191	1.82465	2.02739
75	.20548	.41096	.61644	.82192	1.02740	1.23288	1.43835	1.64383	1.84931	2.05479
76	.20822	.41644	.62466	.83288	1.04110	1.24931	1.45753	1.66575	1.87397	2.08219
77	.21096	.42192	.63288	.84384	1.05479	1.26575	1.47671	1.68767	1.89863	2.10958
78	.21370	.42740	.64110	.85479	1.06849	1.28219	1.49589	1.70958	1.92328	2.13698
79	.21644	.43288	.64932	.86575	1.08219	1.29863	1.51506	1.73150	1.94794	2.16438
80	.21918	.43836	.65753	.87671	1.09589	1.31507	1.53424	1.75342	1.97620	2.19183
81	.22192	.44384	.66575	.88767	1.10959	1.33151	1.55342	1.77534	1.99726	2.21917
82	.22466	.44932	.67397	.89863	1.12329	1.34794	1.57260	1.79726	2.02191	2.24657
83	.22740	.45479	.68219	.90959	1.13699	1.36438	1.59178	1.81917	2.04657	2.27397
84	.23014	.46027	.69041	.92055	1.15068	1.38082	1.61095	1.84109	2.07123	2.30136
85	.23288	.46575	.69863	.93151	1.16438	1.39726	1.63013	1.86301	2.09589	2.32876
86	.23562	.47123	.70685	.94247	1.17808	1.41370	1.64931	1.88493	2.12054	2.35616
87	.23836	.47671	.71507	.95342	1.19178	1.43014	1.66849	1.90684	2.14520	2.38356
88	.24110	.48219	.72329	.96438	1.20548	1.44657	1.68767	1.92876	2.16986	2.41095
89	.24384	.48767	.73151	.97534	1.21918	1.46301	1.70684	1.95068	2.19452	2.43835
90	.24658	.49315	.73973	.98630	1.23288	1.47945	1.72602	1.97260	2.21917	2.46575

SECTION 3

CORPORATE ORGANIZATION

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 3

CORPORATE ORGANIZATION

Types of Business Organization

SOLE PROPRIETORSHIP.—The simplest and oldest form of organization is that in which one man is sole owner and manager. Farming and many of the smaller businesses are still carried on in this form. Few large businesses are now conducted in this manner. Many enterprises are started by one man, but if they are successful they evolve into partnerships and ultimately into corporations.

In a sole proprietorship of any size, actual operations of the business are handled by employees of varying degrees of ability and responsibility. The relation between the owner and these is usually that of **principal** and **agent.** Their respective rights and duties are governed by the law of principal and agent.

When any of these employees masters the technique of the business, it is usually deemed safest to make him a partner rather than to have him start as competitor, or to accept a partnership or stock interest in a competing concern. A single owner is at much disadvantage when he tries to conduct one of the largely expanded businesses characteristic of present-day conditions. It is a rare exception where any business achieves marked success and does not shortly become a partnership or a corporation.

PARTNERSHIP.—When two or more persons co-operate to carry on some business for profit, the resulting organization is called a partnership. Of late years, a Uniform Partnership Law has been adopted in a number of the states. Before this law went into effect, the law of partnership was in all essential particulars practically the same in all states. The members of a partnership are called partners and the organization is also termed a firm.

The **essentials of a legal partnership** are:

1. Parties legally competent to bind themselves by contract.
2. An agreement, which if formally written out is termed "articles of copartnership."
3. Partnership property or capital.
4. Some lawful business to be conducted for profit.

The parties must be competent to contract. Minors, insane persons, or others not competent to contract, cannot become partners. Married women formerly could not become partners, but such disability does not probably exist in any of the states today.

A partnership agreement may be formed by word of mouth, or without any express agreement if the parties act as partners. In the latter case, the law implies a contract. An **implied partnership** is where persons are found to have a common fund in which they have a community of interest and to be sharing

the profits and the losses of some lawful business. The law will hold them partners both as between themselves and as to third persons. In all cases the formation of a partnership should be by a carefully drawn written instrument or **articles of copartnership.**

Original **partnership property** is derived from partners' investments. Property purchased with partnership funds becomes prima facie partnership property. If profits are retained in the business, they become partnership property. The firm name, good-will, and any trade-marks used in the business, are partnership property, in which each partner has an interest. On dissolution, after payment of debts, if there are sufficient funds, each partner is entitled first to the return of his investment, then to his share of the profits. Profits are apportioned equally, even though investments vary, unless the articles of partnership expressly provide otherwise. Partners are not entitled to interest on investments or to salary for services unless it is so provided in the agreement.

To make a **legal partnership**, the business must be lawful. The law will not recognize any association which violates the law or carries on any business contrary to public policy. An agreement for association to conduct a lottery, or a gambling establishment, or to make, transport, or sell intoxicating liquor, makes the parties conspirators, not partners.

The **object** must be **to make profits.** Clubs, lodges, societies, and associations of many kinds exist, but unless they are conducting a business for profit they are not held to be liable as partners. In such associations, not organized for profit, members and officers can only be held personally for such contracts and obligations as they have voted for, assented to, or authorized. It is an essential feature of a partnership that the purpose of the association shall be to make profits.

The **two most salient features of a partnership** are:

1. The **full authority of each partner** to bind the firm by contract or by his dealings with the partnership property. Each partner is a general agent for the firm with full powers to act for it in the scope of the partnership business.
2. The **full responsibility of each partner** for all firm obligations. The right to share profits involves the liability to share losses, which liability is not limited, but extends to the whole estate of the partner. This feature of the partnership is the most powerful reason for preferring the limited liability of corporate stockholders.

As between themselves, partners may legally agree to limit the authority of one or all partners, but this agreement does not affect outsiders dealing with the firm. These may always assume that each partner has full authority to bind his associates, and that if the firm becomes insolvent the private estate of each partner is liable to satisfy creditors of the partnership.

Active partners in whose names the business is conducted are termed **general partners.**

A **secret partner** is one whose connection with the business is not known but who shares in profits. In case of insolvency and the discovery of his interest, he is held liable as a general partner. A **silent partner** is one who takes no active part in the business but supplies capital or in some other way entitles himself to share in profits. He is liable as a general partner.

A **special** or **limited partner** is one who goes into the firm but limits his liability to the amount he invests. Such an arrangement can be made only in those states where statutes authorize such restriction on partnership liability.

A partnership may represent the investment of the partners by shares of stock, when it is called a **joint-stock company.** The holders of such stock, however, are held to the full liability of general partners. On this account the form is rarely used.

The partnership organization is nowadays not used for large enterprises of any kind, except to some extent in banking, brokerage, and in various professional and semi-professional callings. J. P. Morgan & Co. have always been a partnership. It is difficult to finance a partnership where funds must be secured from many investors.

EXPRESS TRUSTS.—"Express trusts" are used widely in this country as substitutes for corporations. Corporate taxation and reports are sometimes avoided by their use.

In law a **trust** is created whenever property is placed in possession of one or more persons **in trust** to hold it and to pay over the profits to designated beneficiaries. It is an old legal form usually employed to provide for those unable to do business for themselves. Its use as a means of business combination is recent.

An **express trust** is a trust created by a written instrument called a "declaration of trust," "deed of trust," or "trust agreement." Parties to such instrument are: (1) the creator, (2) the trustee or trustees, and (3) the beneficiary or *cestui que trust.* The property may be real estate, money, goods, chattels, or anything else.

In Massachusetts the corporation law for many years made no provision for organization of real estate companies. Consequently, when it was desired to deal in real estate, it was found practical to deed the property over to trustees to manage, those who had invested or who wished to invest being made beneficiaries. The trustees gave these beneficiaries certificates of trust, which they could transfer in same manner as corporate certificates of stock. Having been sustained by courts for real estate projects, its use has been extended to other lines of business and lately to other states. It is being used somewhat recklessly in some western states. What its future utility as a form of business organization may be, is not entirely certain. Express Trust is also known as "a business trust," or "a Massachusetts trust," or "a common law trust," or "a voluntary association."

When the first combinations in restraint of trade were organized, the form used was an express trust. A controlling stock interest in each corporation to be controlled was transferred to a board of trustees who elected directors to do as they were told. In this way they dominated the trust industries. Until the courts decided that this use of the trust form was in restraint of trade and therefore illegal, the arrangement worked well. It was not the use of trustees that was illegal but the object of the trust. This has given the name ill repute, the word "trust" being still used commonly in the sense of "monopoly." This false idea should be abandoned and its use in ordinary and entirely lawful business should be studied.

Well-known enterprises are organized as express trusts, among them being The Mackay Companies (Postal Telegraph), Amoskeag Manufacturing Co., Massachusetts Gas Companies, and the Montgomery Ward Warehouse Associates. It has also been used by many irresponsible oil companies. So many people have lost money through these that it is likely to give the form undeserved ill repute. Also, such trusts frequently are organized by incompetent parties who do not understand the law. None but a competent lawyer skilled in the laws of the state in which the trust is to operate should advise such form of organization and draft the trust agreement.

Where this form of business organization can be safely used and the trust instruments are properly drawn, it has the following **advantages,** common also to the corporate form:

1. Neither shareholders nor trustees are liable as partners.
2. Shares are transferable as are corporate shares.
3. Trustees can do business and manage the trust property as directors do with a corporate business and property.
4. It can be made reasonably permanent. In most states a trust can be created for one or more lives and 21 years more.
5. It may be dissolved by agreement.
6. An express trust may sue and be sued as readily as a corporation.
7. Shareholders may have accountings and such other information as is proper.

In addition it has these advantages over the corporate form:

8. It can do business in any part of the country as freely as an individual or a partnership. (In some states, however, the members may be held to a partnership liability.)
9. It is not required to make out reports, take out licenses, and pay taxes to the same extent that a corporation is.
10. The trustees may ask for court guidance in some cases where the rights and the powers of the trust are not clear.
11. Under some circumstances it is better to have a continued board of trustees than to have annual elections of directors.
12. If trustees are not elected annually, the trust is not subject to federal income tax.

In each state it is necessary to consult the local statutes to ascertain what taxes and other requirements may be imposed upon such trust associations.

To **avoid partnership liability** there must be a full disclaimer in the trust agreement of any individual liability. This should also be printed on stationery and in particular on all bills, orders, and invoices, and other instruments involving contractual liability.

CORPORATE ORGANIZATION.—Men organize corporations for many purposes. There are municipal, ecclesiastical, charitable, educational, social, membership, and business corporations. The general peculiarity of all these is that many unite to act as one body. In referring to a firm, we say "they." In referring to a corporation, we say "it." A corporation possesses an entity, distinct from its membership. It can take a deed to itself in its own name. If a partnership acquires real estate, it is deeded to the members of the firm by name or to a trustee to hold for the firm.

Corporations are divided into **membership** and **stock** corporations. **Membership corporations** include most religious, educational, charitable, and social organizations. **Stock corporations** include: (1) public utility corporations, to conduct railroads and telegraphs, or to supply water, gas, and electricity; (2) moneyed corporations, to manage financial or banking businesses; and (3) business corporations, for merchandising, manufacturing, mining, and all ordinary businesses conducted for profit.

Stock corporations have capital represented by transferable shares of stock which are issued to the stockholders. As a general rule, stockholders have no liability except to pay for the stock for which they have subscribed. These two features, **transferability of shares** and **limitation of liability,** make the stock

corporation the favored form of modern business organization. With some variations of detail the form is used in every civilized country.

A **corporation is governed**: (1) by the corporation laws of the state in which it is incorporated or in which it is doing business; (2) by the provisions of its charter: and (3) by its by-laws. These three rank as to authority in the order given.

The Charter.—A partnership is a matter of private agreement between the parties immediately concerned. Incorporation must be authorized by the state and in form prescribed by the state. The instrument creating a corporation is the **charter, certificate of incorporation,** or **articles of incorporation.** It is always made a public record.

The charter is the basic law of the corporate organization, answering to the constitution of a state. Holders of stock have the right under state laws and under their charter to adopt by-laws for government of the corporation and the business.

By-Laws.—By-laws are the permanent rules of corporate action as distinguished from motions and resolutions. The latter usually apply only to particular occasions and special matters. By-laws are enacted by stockholders only, unless by statute, charter provision, or action of the stockholders, such power is delegated to the directors. By-laws prescribe how stock shall be issued and when corporate meetings shall be held, and define the duties and powers of directors and officers.

The **primary object of business organization** is to combine good management with sufficient capital to conduct an enterprise profitably. The corporation accomplishes this more effectively than any other form of organization, and has become the usual form in which important enterprises are undertaken.

The **chief advantages of the corporate form** are:

1. Limitation of liability of investors to a definite amount.
2. Distinct entity for legal and business ends.
3. Representation of its capital by transferable shares.
4. Management by an elected board of directors acting through officers and agents.
5. Stability and permanence of organization.
6. Facility of obtaining capital because of these advantages.

At present, practically all manufacturing, merchandising, and mining operations are conducted under corporate form. Nearly all banking, trust business, insurance, and other financial organizations are corporations. All public utilities are corporate bodies. Under no other form is it possible to secure capital and conduct the extended business operations of modern civilization.

Internal Corporate Organization

CORPORATE STOCK.—Corporations for profit are authorized to have a certain fixed capital divided into shares collectively called stock. Those supplying the capital subscribe for as many shares of stock as they are willing to pay for. Thus, if $100,000 is needed to establish and supply working capital for an enterprise, the promoters incorporate under a charter authorizing them to act as a corporation with a capital of $100,000, divided into 1,000 shares of par value of $100 each. An investor who subscribes for 50 shares, pays $5,000 to comply with terms of his subscription. By his **stock subscription** he becomes a stockholder. When he pays his subscription in full he is entitled to a **stock certificate** or certificates evidencing ownership. Par value of shares is usually put

at \$100, \$50, or \$10. Mining and oil company shares are often only \$1 par value.

Sometimes a portion of the stock is issued as **preferred stock.** It is provided in the charter that such stock shall receive a specified annual dividend of 6%, 7%, or 8% before anything is paid to holders of **common stock.** If in any year there is not sufficient surplus profit to pay preferred dividends, or if directors fail to declare a dividend, it is customary to accumulate such passed dividends until paid. The stock is then termed **cumulative preferred stock.**

Within the last decade, many states have authorized issuance of **no-par-value stock.** Shares of such stock are not valued, i.e., have no par value. Each share entitles the holder to a proportionate share of any dividends declared. If a corporation has 10,000 shares of no-par-value stock outstanding and declares a dividend, the holder of one share is entitled to 1/10,000 of the whole amount.

Each share of stock issued entitles its owner to one vote in all stockholders' meetings. Preferred stock is sometimes denied voting privilege by charter provision. It then is **non-voting stock.**

STOCK CERTIFICATES.—Owners of **full-paid stock** are entitled to certificates setting forth ownership, number of shares owned, and par value of shares. If it is preferred stock, details regarding preference are given. The certificates must be signed by two corporate officers, usually the president and treasurer, and have the corporate seal impressed upon them. There is a blank form of transfer on the back of each certificate. Printed forms for such certificates are usually bound in a book, serially numbered, and attached to stubs on which, upon issuance, are entered data necessary for the corporate records.

STOCK TRANSFERS.—When stock is sold, transfer is made by signing the blank transfer form on back of certificate and delivering same to transferee. **When so endorsed in blank,** it may be passed from hand to hand, but until it has been presented to the proper corporate officer for cancellation and issuance of a new certificate in holder's name, the original holder remains the **owner of record,** entitled to vote and receive dividends. In many states corporations are required to keep a **stock book** or **ledger** showing names of stockholders, when they became such, and number of shares held. This stock book is final authority as to who are stockholders of record.

Uniform Stock Transfer Acts are in force in Alaska, Connecticut, Illinois, Louisiana, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Dakota, Tennessee, and Wisconsin.

STOCKHOLDERS.—Acceptance of a subscription makes the subscriber a stockholder. Failure to comply with terms of payment may cause a stockholder to forfeit his rights, but until forfeiture is declared by formal procedure he remains a stockholder. When stock is purchased, the buyer turns in his certificate for cancellation. He becomes entitled to stockholders' rights only upon issuance to him of a new certificate.

Stockholders possess few rights other than those of voting for directors, for amendment of by-laws at corporate meetings, and sharing in dividends declared. Directors have direct management and control. Stockholders cannot act directly for the corporation in the conduct of its business.

Rights of stockholders are:

1. To be notified of stockholders' meetings, take part in such meetings in person or by proxy, and cast one vote for each share of stock held.
2. When dividends are declared, to share proportionately according to number of shares of stock held.

3. In event of dissolution, to share proportionately in assets remaining after payment of all debts.
4. To inspect corporate books and records to limited extent.

Powers of stockholders are:

1. To amend, repeal, or add to by-laws.
2. To elect directors.
3. To vote on any proposed amendment to the charter.
4. To vote on any proposed dissolution of the corporation.
5. To vote on any proposed sale of the entire assets.
6. To exercise any special powers granted by the charter.

If any illegal action is to be taken by directors or officers, any stockholder may appeal to the courts for relief by injunction.

Liabilities of stockholders are to pay their subscriptions in full. Even though certificates are issued marked "full-paid," stockholders may be liable to creditors for amounts remaining unpaid. In New York, under some circumstances, a stockholder, even though his stock is fully paid, may by special law be held liable for unpaid wages. In California, stockholders are liable for their proportion of corporate debts remaining unpaid after assets of corporation are exhausted. These are exceptions to the rule that in business corporations **owners of full-paid stock have no liability.**

Generally, stockholders of banks and trust companies are liable for an additional amount equal to the face value of their stock if assets are insufficient to pay creditors.

Minority stockholders are entitled to notice of corporate meetings, and may attend and vote. They are entitled to inspect the corporate **stock books** during business hours and may copy the names. Theoretically, they have the right to inspect the books of account, but in a modern corporation with thousands of stockholders, it is necessary to restrict this right. Usually it is necessary to secure an order from a court to examine books of account.

Some corporate proceedings, such as sale of all corporate property, require consent of all stockholders. This gives the minority a veto power. Under the common law, the majority can elect all members of the board, leaving the minority without representation, so that they have no means of knowing when illegal action is contemplated. Representation on the board is an advantage, so, in many states, **cumulative voting** is either prescribed or may be provided for in the charter.

Cumulative voting insures minority representation. The Pennsylvania Constitution provides: "In all elections for directors or managers of a corporation, each member or shareholder may cast the whole number of his votes for one candidate or distribute them upon two or more candidates as he may prefer."

Under cumulative voting the majority control the corporation, but the minority, if their holdings are material, can elect one or more directors. Use of cumulative voting to advantage may require careful calculation. If five directors are to be elected and 100 shares are voting, the holder of 17 shares is able to elect himself to the board.

A **voting trust** is an arrangement among certain stockholders to maintain agreed management of a corporation for a period of time. Such arrangement is legal if not used fraudulently against other stockholders. This form of trust should be distinguished from "express trusts," also from trusts formerly created to establish trade monopolies. A voting trust is created by placing

in the hands of trustees enough stock to elect a majority of the directors. Powers of these trustees are defined by an instrument called the **voting trust agreement,** which is signed by all who enter the trust. This agreement specifies how long the stock is to be held and for whom it is to be voted by the trustees; or that voting is left to the discretion of the trustees. The stock held in trust is transferred to the trustees, certificates being taken out in their names. The trustees issue negotiable trustees' receipts to those who deposit stock. Dividends declared on the trusteed stock are turned over to the equitable owners, the stockholders. In New York and Maryland voting trusts are authorized by statute. In Massachusetts, New Jersey, California, and other states, they have been recognized by the courts. The highest court of Illinois condemned them unqualifiedly as illegal arrangements.

DIVIDENDS.—Dividends may be declared only from **surplus profits,** and directors have power to declare such dividends at discretion. In New Jersey the statute law requires division of all surplus profits. In that state it is customary to grant to directors, by special charter provision, the right to use discretion in declaring dividends.

When directors are unreasonable in refusing to declare dividends, it is sometimes possible to compel them to make such declaration by court procedure. Courts do not act unless abuse of discretion is manifest. Directors are elected to manage the affairs of the corporation, and it is presumed that they do so properly.

When a dividend is declared, it may be made payable at a future date. It was formerly customary to close stock books for transfers a certain number of days before the dividend is paid, so that the officers may know definitely to whom to make out dividend checks. Although this practice is still followed by some companies, many now pay dividends to stockholders of record as of a given date, the books not being closed.

An exception to the rule that **no dividend must impair capital stock,** is made for companies working mines, operating under leases and under patents, and generally dealing with wasting assets. If such corporations are able to pay their debts, they may declare dividends consisting, in part at least, of their original capital.

When dividends are once declared, they are debts of the company. If the company becomes insolvent before a given dividend is paid, it becomes a claim against the company. If stockholders are indebted to the corporation at the time the dividend is payable, their debts may be set off against the dividend.

The amount apparently available for dividends may be improperly increased by charging replacements and repairs to capital instead of to expense and maintenance. Generally, only those expenditures for which stock or bonds may with propriety be issued, may properly be charged to capital account.

Dividends must be equal as between stockholders of the same class. That is, preferred stockholders must all fare alike, and same is true of common stockholders. Time and method of payment must also be the same for all of each class.

The simplest form of dividends is payment in cash. If, however, corporate profits are not in form of cash, and directors do not desire to borrow money with which to pay them, several courses are open to them:

1. Capital stock may be increased by distributing a stock dividend.
2. Bonds may be issued to the amount of the proposed dividend and distributed in lieu of cash.

3. Scrip may be issued against the profits and distributed as dividends.
4. If the property is in such shape that it can be divided, it may be distributed as a property dividend.

In a few states, **stock dividends** are prohibited by statute. In Massachusetts certain classes of public service corporations are forbidden to issue stock or scrip dividends. Generally, stock dividends are unobjectionable. If advantageous to retain profits as working capital, it is proper to do so. The decision of the Supreme Court that such dividends are not income when received by stockholders, has occasioned the payment of many such dividends. The stock dividend must represent real values, not consist in watering existing capital.

Bond dividends may be issued against actual profits at discretion of the directors. Bonds once issued are a continuing obligation and interest on them must be paid when due. Stock dividends create no such liability.

Scrip dividends are issued in many forms. They are a form of deferred dividend. Date of payment may be absolute or contingent. It may be "at the pleasure of the company." In such case the scrip must be paid within a reasonable time.

Property dividends are usually paid in stocks or bonds of other corporations which have come into possession of paying corporation. Such dividends may be paid in other property, but usually this is difficult to divide. When corporations are liquidated, property may be assigned to the stockholders, but in such case it is not properly a dividend but a distribution of assets.

Dividend checks are usually mailed. This is more convenient than sending notice of time and place of payment. When notice is given, it is sent out by the secretary or treasurer, as the by-laws prescribe. In such cases notice is also usually published in a paper of general circulation.

Stockholders of record are legally entitled to receive dividends. The treasurer can safely pay them over to those shown by the books to be stockholders. If some other person has an equitable right to receive such dividend, it is his duty to notify the treasurer. If the treasurer has received such notice, he should pay the dividend to the rightful owner. In case of doubt, it is safest for him to withhold payment until the parties have settled the question of title. If stock is in the name of a married woman, the treasurer must pay her, not her husband, unless her husband has been authorized to receive it as her agent.

THE CHARTER.—The charter is an instrument issued by authority of the state authorizing incorporators to do business under the corporate name. It is also termed "certificate of incorporation" or "articles of association." The United States government grants charters for national banks and has chartered railway companies to construct interstate railways. For all ordinary businesses charters are granted by the states under general laws, by which any group of its citizens may incorporate upon complying with prescribed formalities and paying certain fees. Procedure for incorporation of companies designed to conduct ordinary business is simple. To secure charters for banks, or other financial institutions, is usually more difficult. If franchises to construct railways or other public utilities are sought, under which it may be necessary to condemn private property, requirements are usually even more strict.

In the state of incorporation, companies are known as **domestic corporations.** If they do business in other states, they are there accounted as **foreign corporations**, and must secure licenses and pay certain fees before they can lawfully do business. It is unsafe to do business in other states before securing licenses to do so.

Charters for business corporations usually provide for the following details of organization:

1. Corporate name. This must not resemble the name of any existing corporation in the state.
2. Corporate purposes. These may be set out simply, as "To buy, sell, and generally deal in groceries and foodstuffs." Or it may be amplified at great length, which most clients prefer.
3. Amount of capital stock, shares into which it is divided, and par value of each share. If any stock is preferred, this is set forth, and if any part is to be no-par-value stock, that is also set forth.
4. Location and duration of corporation.
5. Number of directors. In some states, the first board of directors is named in the charter.
6. Names and addresses of incorporators and, usually, number of shares for which each subscribes.
7. It is usual to add any special provision allowed by the state law, such as a provision to give power to hold the stock of other corporations, to use the system of cumulative voting, or to limit the power of directors to incur debt.

The name must not be similar to, or resemble that of any other corporation in the state. Where a partnership is incorporated, it is usually desirable to retain the firm name, which is done by adding the word "Company," or the abbreviation "Inc." For a new organization it is advisable to take some name that is not commonplace and that lends itself to use as a trade-mark. It is not easy later to change a corporate name.

Corporate purposes should be set out at sufficient length to include all that the corporation is likely to undertake. While individuals or firms may do any manner of business or change from one form of business to another at will, corporations are limited to the purposes set forth in their charters, and on this account setting forth the comprehensive purposes of modern corporations is justified. If illegal powers are set out, the charters will not be granted, or, if carelessly granted by the state officials, such grant is void as to such illegal powers, i.e., the charters are good as to the legal parts and void as to the others. If corporations do things not authorized by their charters, as when manufacturing corporations undertake banking, such acts are ultra vires, in plain English, beyond their powers. Corporations cannot enforce contracts relating to ultra vires business, and the directors who vote it may make themselves personally liable.

Amount of **capital stock** which a corporation issues must be set out with precision. If directors issue stock in excess of amount authorized, it is an ultra vires act for which they are answerable. The charter should state number of shares and par value of each. If preferred or other special classes of stock are to be issued, they should be carefully described. If preferred stock is to be issued, amount of preference as to dividends should be stated; whether it is cumulative or not; also whether it is preferred as to assets in event of liquidation; whether it is to participate with the common stock after receiving its preference; and whether it is to be deprived of the voting right. If nothing is said as to voting, preferred stock has same voting right as common stock.

The **location** of a corporation and of its **principal office** should be given. The natural locality for a corporation is the state in which it proposes to do business, but in some cases there is advantage in incorporating elsewhere and doing busi-

ness in the home state as a **foreign corporation.** Sometimes another state is selected to save fees and taxes.

In some states **duration** of corporations is limited to from 20 to 50 years. Usually, however, corporations may be made perpetual, and this is then always done.

The **number of directors** is not always given in the charter. Where it can be given it is best to do so. Three is the minimum. A large board is rarely advantageous, and, if large, most of the real management is turned over to standing committees.

Qualifications of directors are usually prescribed in the statute law relating to corporations. In some states one or more directors must be residents of the state of incorporation. It is usual to require that they be stockholders. Sometimes it is provided in the charter that directors shall own a considerable amount of stock. By such provision it is possible to prevent big stockholders from filling the board with "dummy directors," that is, directors who have been given a share or two to qualify them. Sometimes power is given directors to pass by-laws.

Incorporators who sign the charter are often merely dummies, who drop out as soon as they have acted for their principals through the first meetings. Usually the least number of incorporators possible is three. Each must sign and acknowledge the instrument. Where there are a number of incorporators living in different places, it takes time and trouble to get the instrument properly signed. Hence the preference in some cases for dummy incorporators.

FILING THE CHARTER.—The procedure incident to filing the charter varies. In some states it is filed first with the county clerk. Then a duplicate copy is forwarded to the secretary of state at the state capital. Filing fees are due with each filing, and the organization tax due the state is paid to the officer authorized to receive it. Sometimes state officials scrutinize proposed charters closely and send them back for correction if not in accordance with their ideas. If the charter is satisfactory and all fees are paid, a copy of the instrument is issued under the state seal and signed by the secretary of state. Other copies duly certified can be had on payment of fees.

Generally, the grant of a charter carries without specification the following rights as incidental to the main purpose of corporate operations:

1. **To sue and to be sued in the corporate name.**—A partnership is treated as a collection of individuals and in any litigation each separate partner must be named.

2. **To have a corporate seal.**—The right to use a seal was once highly valued. Usually a corporation is bound by its corporate signature affixed by an authorized officer. The seal is used for deeds, powers of attorney, and certificates of stock.

3. **To buy, sell, and hold property.**—This refers to property required for corporate business and purposes.

4. **To appoint directors, officers, and agents.**—The corporation is managed by its directors and through its officers and agents and necessarily has power to appoint them.

5. **To make by-laws.**—The charter confers a few basic powers, the details of corporate operation being fixed by by-laws adopted by the stockholders.

6. **To dissolve itself.**—Formerly all the stockholders had to agree to a dissolution. In most states the statutes now prescribe some specified majority that can act in this matter.

7. **To do all things necessary.**—The power, for instance, to make shoes gives incidental powers to buy land for a factory, contract for or build a factory, buy machinery and raw materials, employ necessary labor, also have a selling organization. On this account it is not necessary to have the extremely detailed powers set forth in most modern charters.

AMENDMENT OF A CHARTER.—This somewhat troublesome procedure may be made necessary by hasty and unconsidered incorporation. In New Jersey or Delaware an amendment before organization is completed may be arranged with little trouble. After organization is completed any amendment must be made according to statutory procedure in each state.

Generally, to amend a charter requires a duly called meeting of stockholders, at which a two-thirds majority must vote for the proposed amendment. Then the amendment must be signed and acknowledged, and, with evidence that the stockholders' meeting was properly assembled and held, it is filed in same offices as is the original charter. Thereafter, the charter is composed of original charter and amendment taken together, the original charter being in force except as altered by amendment.

Formalities of calling the stockholders' meeting, advertising it, and evidencing what was done in it, vary with states.

BY-LAWS.—Charter forms[1] provide but foundations for corporate structures. Granting a charter confers the right to adopt by-laws for government of the corporate body and regulation of its affairs. A simple by-law form is given.[2] Regulations set forth therein may be expanded into greater detail. By-laws provide for the following essential matters:

1. Issue and transfer of stock.
2. Time, place, and notice to be given for stockholders' meetings.
3. Powers of directors, and time, place and notice required for their meetings.
4. Appointment of officers, and their powers, duties, and compensation.
5. Handling of funds and declaration of dividends.
6. Provisions as to corporate seal and amendment of by-laws.

When a partnership is incorporated and there are few stockholders, all of whom are active in the business, the by-laws may be few and simple, and operations of the corporation may be conducted with little formality; but in a large organization, carrying on extensive operations, by-laws are necessarily more complex.

By-laws may usually be adopted and repealed by majority vote at a regular meeting, or at a special meeting of stockholders called for the purpose. Under some circumstances, by-laws become contracts. In such cases they can only be modified in manner prescribed. Thus, in a New Jersey case where stock had been sold in consideration of a by-law providing that the existing by-laws should not be changed except by a specified majority vote of stockholders, it was held that the by-laws constituted a contract between old and new stockholders and could not be set aside even by an act of legislature.

By-Laws Regulating Stock Issues.—The amount of stock a company may issue is prescribed by charter. Sometimes the charter provision is repeated in the by-laws. Usually it is prescribed that each paid-up stockholder is entitled to a certificate for his stock signed by specified officers, sealed and issued from the certificate book in numerical order, and that a record thereof

[1] See p. 214.
[2] See p. 216.

is to be entered on the stub. It is likewise provided how transfers shall be made, and for how long stock books shall be closed to transfers before elections and dividend days. Provision is sometimes made for redemption of lost certificates.

Treasury stock is sometimes defined as "outstanding stock of the company that has been donated or otherwise acquired." It is held subject to disposal by the directors and can neither vote nor participate in dividends while held by the company. Under such circumstances, treasury stock is considered an asset and is distinguished from unissued stock, which, being merely a right to issue stock, is not an asset.

By-Laws Regulating Meetings.—By-laws usually prescribe when and where regular meetings of stockholders and directors shall be held, what notice shall be given, requirements as to quorum, and order of corporate business at such meetings. They also prescribe how special meetings are to be called—how the notice shall be given as to **time, place,** and **objects** of such special meetings. If elections are to be held at any such meetings, it should be so stated and formalities of procedure should be prescribed.

By-Laws Regulating Directors.—Powers of the board of directors are specified in the by-laws. If there are to be limitations on these powers, they should be set out in the by-laws. It is usual to specify what officers are to be elected by the board and how. If the board has power to fix their compensation, or to remove them, it should be set out in the by-laws. Power of the board to fill vacancies in its own membership should be specified. If the corporation is to have standing committees, their membership, powers, and method of appointment should be set forth. Time and place for directors' meetings, number needed to make a quorum, and order of business at such meetings, should be set forth in detail.

By-Laws Regulating Officers.—By-laws should specify the several officers of the company, give their powers, duties, compensation, or how compensation is to be fixed, and what if any powers of removal exist. Limitations or variations of their usual powers should also be given.

By-Laws Regulating Dividends and Finance.—Power of the board to declare dividends from surplus profits should be set forth. Duty of depositing funds of corporation in a suitable bank in the name of the corporation, and manner of checking out moneys so deposited, should be specified.

Other By-Law Regulations.—It is usual to specify what the seal shall be and who shall have custody of it. Other provisions often relate to method of amending or repealing by-laws. If board has any power to make or repeal by-laws, it should be set out.

Many provisions of the state or common law may often be repeated in by-laws to advantage. For example, provision that no dividend shall be declared that will impair capital of the company is common law and has been re-enacted by legislatures of most states, but it is well to have it repeated in by-laws.

MEETINGS.—All corporate action must be authorized by meetings of stockholders or directors. A corporation must be authorized by the state before it can act in any capacity. When so authorized, an **organization meeting** of incorporators or of the first stockholders is held to elect directors, adopt by-laws, and transact any other business. The directors next meet, elect officers, rent offices, authorize sale of stock, and do anything else that is needed to enable the corporation to begin business. In Maine, Massachusetts, and some other states, this procedure is reversed. There directors and officers are chosen and by-laws are adopted before the corporation is chartered.

Meetings held at times set forth in the by-laws are called **regular meetings.** Meetings held at other times for special purposes are called **special meetings.**

1. **First Meeting of Stockholders.**—The number of incorporators is usually the least allowed by law. When the charter has been granted by the state, the incorporators are usually assembled for the first meeting by a call signed by each one. This call fixes time and place, mentions important business to be transacted, and closes with waiver of additional notice of the meeting. As those who incorporate the company conduct the first meeting and know exactly what they want, desired proceedings are often written out in advance of the meeting. This results in "cut and dried minutes" which are usually followed to the letter. The meeting can, if it wishes, vary these minutes, but usually they are adopted as written. At this first meeting, the charter is presented and accepted by the meeting, by-laws prepared by counsel are read and adopted, and directors are elected. If stock is to be exchanged for property, the exchange is approved by the stockholders and the directors are authorized to close the deal.

2. **First Meeting of Directors.**—This must usually be assembled by all directors joining in the call, thus waiving any additional notice. Such a meeting may be assembled by the procedure prescribed in by-laws, but as this involves delay in giving notice, meeting by a signed call or, if all are present, by unanimous agreement, is the usual plan. The business at this first meeting is to elect officers, authorize the sale or issue of stock, rent offices, adopt a form of stock certificate, accept any stock subscriptions that have been made, and do anything else necessary to start the corporate business.

3. **Regular Meetings of Stockholders.**—Regular meetings of stockholders are the annual meetings to elect directors, hear reports, amend by-laws, and take any action necessary.

In the case of regular meetings of both stockholders and directors, by-laws usually provide for a **notice of regular meetings** to be sent to each person authorized to attend. If this notice is neglected, by-laws themselves are held to give legal notice of time and place.

Regular meetings of directors are usually held on some specified day of each month. They may be held quarterly, or, in some cases, weekly. In large corporations standing committees, that is, executive and finance committees, may set regular times for meetings.

4. **Special Meetings.**—By-laws should provide for calling of special meetings and for notice to be given of such meetings. Special meetings must be called exactly as specified in by-laws, and both **call** and **notice** must give **time, place and particular business** to be brought before the meeting. No business except that mentioned in the call and notice may legally be transacted at the meeting.

DIRECTORS' POWERS AND LIABILITIES.—The board of directors is the managing body of a corporation. Except as restricted by statute, charter, or by-laws, its power is absolute in corporate affairs. It cannot do things outside the regular corporate business, such as dissolve the corporation, sell all its assets, or change the nature of the corporate business. In most states, laws limit its powers and define its liabilities. Thus it is usually necessary for stockholders to authorize any mortgage of the corporate property before directors can act. The **powers of directors are collective,** not individual; i.e., anything within the board's power must be authorized by the board itself assembled in legal meeting. If a particular director is authorized by the board to do a particular thing, he becomes agent of the whole board; but apart from some such special authority, a director has no power.

1. Powers of Directors.—The board of directors is usually given power to appoint officers of the corporation. It has authority to appoint agents and delegate its authority to **standing committees** composed of members of the board. Such standing committees are usually an **executive committee** and a **finance committee.** In large corporations, these committees do most of the work under their respective functions.

Directors are responsible to the stockholders. It is their duty to exercise the same care and diligence in conduct of corporate business that careful and prudent business men exercise in conduct of their own affairs. They should have no personal interest adverse to that of the corporation.

2. Liabilities of Directors.—Directors are personally liable for any losses caused by their ultra vires acts, i.e., by acts authorized by them but which are beyond the legal powers of the corporation. They are also liable for illegal transactions which they have authorized or consented to, or which are committed by agents of the corporation with their knowledge. They may be liable for issuance of stock as full-paid if it is unpaid or only partly paid. They are liable if they declare dividends when there are no surplus profits from which the dividends can be paid legally. They are liable for gross mismanagement. They are not liable for errors of judgment or honest mistakes in handling corporate business.

In most of the important states, special statutory penalties have been imposed for various misfeasances; e.g., in New York a director is personally liable for loaning corporate funds to stockholders, for making false reports, notes or certificates, or for making transfers of corporate property to defraud or prefer creditors.

Criminal prosecutions may follow most statutory offenses. Difficulty often arises from a director's having personal interests adverse to those of his corporation. A director should be careful when he contracts with his corporation. He should withdraw from the room when his contract is discussed and voted upon, and it should be adopted by a quorum in which he is not included. If he is included the contract is voidable, but not necessarily void.

A director may resign when he wishes. His resignation may be peremptory or it may be worded to take effect when accepted. It should be in writing.

Directors have no power to remove a fellow director. The stockholders do so after trial for adequate cause. In some states right of recall is given by which directors may be removed with or without cause by a specified majority, usually two-thirds, but in some cases by a bare majority.

Vacancies on the board may be filled by the stockholders, or, if by-laws so authorize, by the remainder of the board, if there is a quorum. If directors are not elected at the annual meeting, or if it is not held, the existing members hold over and have all powers of directors. In small corporations the same board may run on in this way many years.

In large corporations it is usual to provide in the by-laws for payment of a fee ranging from $5 to $25 for attendance at meetings. Except for performing special service as agents or officers, directors are not entitled to compensation.

In a few states directors are given more or less power to make and amend by-laws. Such power is unusual and unwise. The principal object of by-laws is to enable stockholders to impose limitations and directions on the extensive powers of management belonging to directors.

OFFICERS OF THE CORPORATION.—Sometimes directors are called officers. This leads to confusion. The officers are usually the president, secretary, and treasurer. In small corporations two of these offices may be held by the same person. In large corporations one or more vice-presidents, assis-

tants for secretary and treasurer, a managing director or general manager, a chairman of the board, an auditor, a comptroller and others, may be found. These officers are usually elected by the board, for one year, as soon as possible after the annual election. The new board should usually have officers of its own selection to carry out its policies. Large corporations have many others than those named, but these rank as agents and employees, not as officers.

President and **vice-president** should be chosen from the board, because they may be asked to preside at meetings of the board. Secretary and treasurer may or may not be directors.

Directors have power to fill vacancies of office. Officers cannot be removed except for cause, unless by-laws, charter, or statute law give such authority. When an officer is to be removed for cause, charges must be preferred and opportunity given him for a hearing.

Officers are liable for negligence or active wrongdoing in connection with their duties. Usually the state law prescribes special penalties for making false reports, loaning corporate funds, refusing to allow inspection of stock books, etc.

Duties.—Duties of the respective officers should be set out in the by-laws. If not thus prescribed, the board can prescribe duties within the usual scope of official duties. Such duties are practically the same in all organizations.

The President.—The president is head of the corporation. He usually signs officially all important instruments. He generally supervises the corporate business and reports to the board and stockholders its condition. There is usually some routine business handled by the president without specific authorization. Any transaction outside this routine should be specially authorized by the board. He usually signs certificates of stock. Sometimes he signs or countersigns corporate checks. He signs corporate notes and drafts if in the usual routine of his business. Otherwise he should be specially authorized. He presides at meetings of the board and, in some cases, at meetings of stockholders.

Vice-presidents, in order of precedence, perform the president's duties in his absence, disability, or refusal to serve. In large corporations, some routine business is probably given each vice-president.

The Secretary.—Usual duties of the secretary are: to keep a record of meetings of stockholders and directors, send out notice of meetings, issue stock certificates, notify directors and officers of election, and keep safely corporate records and instruments. He signs or countersigns all such instruments as the board directs, keeps the corporate seal, and attests its impress when affixed to a corporate instrument. He may be given certain duties of correspondence, or other functions in the conduct of corporate business.

The Treasurer.—The treasurer by virtue of office has charge of the company's money and securities. If these are considerable, he is usually required to give bond for their safe keeping and due return to the corporation. He is usually instructed to deposit the company funds in the name of the company in a bank or trust company designated by resolution of the board. He signs or countersigns company checks, and indorses checks and drafts for collection. In small corporations, either the treasurer keeps the books or it is done under his supervision. In large corporations this function comes under supervision of the auditor or comptroller.

General Manager.—The general manager is not concerned with corporate functions. He supervises and conducts the corporation's business operations, managing as he would were he employed by a firm or an individual. His duties

and compensation are fixed by the by-laws or the board. An executive officer is elected for one year, but to secure continued services of a capable manager, the board may contract with him for a term of years. Specifications of such contract should define his term, duties, and compensation.

Counsel.—In large corporations a lawyer or legal firm is retained as part of the management. Counsel for a corporation has no independent authority to act, except as authorized by the board. The duty of counsel is to advise with officers of the company in matters requiring legal advice, prepare or revise contracts, and represent the company in litigation.

CORPORATE RECORDS.—Apart from financial records and books of account, there are certain important books of record peculiar to the corporation. These are, **minute book,**[3] **stock certificate book,**[4] **transfer book, stock book,** and **stock ledger.** These books are kept by the secretary.

The **minute book,** if kept properly, is legal evidence of proceedings at stockholders' and directors' meetings. The secretary is its custodian. Entries in it should be made by him only. Any director has the right to inspect it at any suitable time. It should be in such shape that minutes cannot be easily altered. Minutes are usually entered in conventional form. They should present an accurate record of transactions at each meeting; but not of what is said, unless that is necessary to evidence what is done. Minutes should be approved at the next legal meeting of the body whose proceedings are recorded. When, before such approval, minutes made by the secretary are corrected, the record should show what was stricken out as well as the correction ordered.

CORPORATE OPERATION.—The object of business organization is to combine good management with sufficient capital to conduct some line of business profitably. In a modern business corporation, shareholders furnish the capital, and elect a board of directors to manage the operations of the corporation. The shareholders also adopt by-laws to prescribe powers and authority of the directors. Directors individually have no authority. They act only as a board when legally assembled with a quorum present. As a board their power to manage is limited only by state laws, charter and by-laws passed by stockholders. To carry their plans into effect, they pass resolutions and motions, elect officers, and appoint agents to transact such business as the board directs. Sometimes the board designates certain of its members to act as an executive or finance committee, or both. Such committees have only such powers as are granted by the board or set out in by-laws. If a board member is appointed an officer or agent of the company for any special undertaking, he has the same powers as any other person appointed to the same office or position.

In a **close corporation,** where all stock is held by a small group, the same individuals are likely to be stockholders, directors, and officers. In such case procedure may be informal. Meetings, elections, records, and other formal procedure may be omitted. So long as such corporation is solvent and no one concerned objects, no harm is done.

In a large corporation, where stockholders are numerous and scattered, it is not safe to conduct corporate affairs informally. Meetings should be given notice of and held regularly. Elections should be held annually, and careful records kept of the meetings. Everything pertaining to transfer of stock and handling of finances should be conducted as a careful man of business handles his affairs. Officers when elected should give due attention to their duties,

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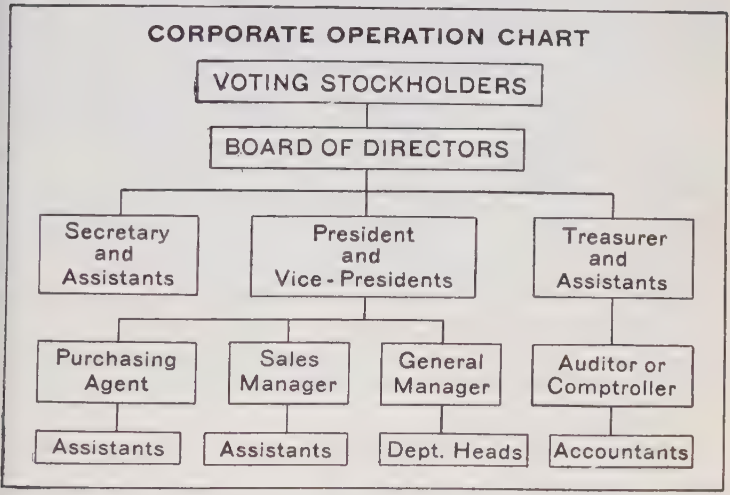
[3] See Form 9, p. 222.

[4] See Forms 4–6, pp. 219–221.

neither neglecting them nor interfering with duties that pertain to other offices. Careful records should be kept of corporate proceedings and of financial transactions. When corporate machinery is used intelligently and in good faith, it is the most satisfactory form of organization. The chart given below shows the typical corporate organization, and delegation of authority to directors, officers, and agents.



DISSOLUTION.—A charter is usually granted for a specified term of years. t the expiration of that period, the corporation terminates unless the charter s renewed.

At any time stockholders, by unanimous consent, may surrender their harter and terminate the company's existence.

Usually, the state reserves power to repeal the charter and thus terminate ne corporation at any time. Unless such power is expressly reserved by the ate, a charter is held to be a contract protected by the constitution, which the ate cannot dissolve.

A court can dissolve a corporation when proper application is made to it for isuse or non-use of power.

An ordinary business corporation is dissolved by proceedings in bankruptcy. corporation operating a public utility, in event of insolvency, is usually eorganized in some shape to avoid forfeiture of its franchise.

Usually statutes provide means by which a specified majority of stockholders ay by proper procedure wind up the affairs of a corporation. In such case is necessary to dispose of its assets, pay off its obligations, and divide remaining ssets proportionately among stockholders.

Frequently where small corporations fail to pay and have exhausted their ssets, they dissolve informally by simply stopping.

Corporate Promotion and Financing

CORPORATE PROMOTION.—One who actively engages in the financing and organization of an enterprise under corporate form is called a **promoter.** The legal definition is more restricted: a promoter is one "who brings about the incorporation and organization of a corporation." A promoter usually expects to make a profit out of what he does—in many cases undue profits, and in consequence of this last tendency the name has come into some ill repute. The proper work of a promoter is legitimate and useful.

Abuse of promotion occurs when promoters arrange for issuance of large amounts of stock to themselves and associates for nominal service or for overvalued properties. This can easily be done when the first meetings are held and the whole organization is in the hands of its promoters and their associates. If a corporation, from its business, has not only to pay dividends to stockholders who supply cash, but also has to earn dividends on as much or more stock issued for nominal values to promoters, it is carrying a double burden.

It is legal to **issue stock for property,** but when organization meetings are in hands of promoters, who are in most cases buying their own property, or paying themselves for their own services, the property or services are likely to be overvalued. If later this overvaluation is brought before a court, it will be set aside and the promoters will be compelled to disgorge. In many cases this cannot be done on account of the cost of litigation, or because of the difficulty of enforcing judgments.

This rule is given by an authoritative writer: "There is no rule of law prohibiting a person from forming a corporation for the purpose of selling property to it and making a profit from the sale. The law merely requires that such a transaction be entirely open and free from deception upon the company and those who become members."[5]

In subscribing for stock or buying stock in a new corporation, arrangements with promoters should be carefully examined. Dividends are surplus profits divided among holders of outstanding stock. If a corporation has 1,000 shares authorized, 500 shares being issued to the promoters for patents, services, contracts, etc., and 500 shares are sold at \$100 each to *bona fide* subscribers, each \$100 so paid in must earn enough to pay dividends on \$200 if the cash subscribers are to get fair returns.

No-par-value stock is deceptive when used to compensate promoters. In one case capital stock of a corporation was 200,000 shares of no-par-value stock. Half of this was issued to the promoter in payment for the scheme. He tried to sell 10,000 shares at \$10 a share, seemingly a moderate price. If he had succeeded in selling the amount offered, the corporation would have received \$100,000, the working capital required to finance its business. The promoter would have had ten times as many shares as the cash investors. If there had been profits, he would have received 10/11 and the investors 1/11. For the investors to get a 5% dividend, their money would have had to earn 55%. Yet stock on this basis was sold to good business men.

FINANCING A CORPORATION.—To insure a corporation's success three things are essential:

1. A sound undertaking
2. Sufficient capital
3. Efficient management

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[5] 1 Morawetz, Sec. 293.

Without these an enterprise will fail. Even if the enterprise is otherwise sound and management is efficient, enough capital must be provided. If $75,000 is raised but $100,000 is needed, the $75,000 will ordinarily become exhausted and the corporation be involved in debt. Efforts made to raise additional money required will fail because no one likes to put money into a corporation already in bad shape.

When an ordinary going business owned by an individual or a partnership is incorporated, it does not necessarily require additional finances. The business is taken over in exchange for stock of the new corporation and thereafter is conducted under corporate form. If desirable to enlarge the business—often the motive for incorporation—a stock issue in excess of the present worth of the business is required. This excess of stock is sold to investors. The working capital is increased by the stock thus sold. Arrangements for disposing of stock are usually made before incorporation is effected.

If it is a new enterprise, on small or moderate scale, arrangements will probably be made to secure the amounts required before organization, although it is not uncommon first to organize the corporation, then to finance it by selling the stock to parties in the vicinity familiar with the proposed enterprise and business ability of those who are to conduct it.

When a larger enterprise is organized or a merger or reorganization of established enterprises is effected, heavy sales of stock and other securities may be necessary. The investing public is then reached through bankers, brokers, and investment houses. Such financing may require services of the largest banks and financial institutions.

CORPORATE SECURITIES.—The general term "corporate securities" is comprehensive, embracing stock of all kinds, bonds of numerous varieties and various forms of notes and similar obligations. Giving shape to and marketing these corporate securities requires skill and experience.

CORPORATE BONDS.—The purchaser of stock becomes a stockholder. His investment not being a debt, does not have to be paid. Neither is there obligation to pay him dividends, except when surplus profits exist, and in the judgment of the directors these are not needed in the business. With bond issues the case is different. Purchasers are creditors of the company. They have a legal claim for interest, and, when due, for the principal of their investment. The advantage to the corporation is that interest is less than dividends should be. If a well-managed corporation can borrow half its necessary capital by means of a 6% bond issue, and can earn 8% or more on capital, the stockholders benefit by the 8% earned on their own investment and secure the extra 2% earned on bond capital. A **corporate bond** is a promise to pay a certain amount at a certain time, meanwhile to pay interest at given times on that amount. It is in practice secured by a **mortgage** or **deed of trust** on all or part of corporate property.

Ownership of a bond carries with it no right of corporate control and no interest in corporate profits. The money paid is a loan to the corporation. The face value of a bond is usually $500 or $1,000, though recently many $100 bonds have been issued. Bonds are usually made payable in gold coin or its equivalent. Interest is usually paid semiannually. **Interest coupons** are usually attached to the bond. Some bonds are registered, giving greater security against loss by the owner. Bonds payable to bearer are more convenient.

A **debenture,** or **debenture bond** is an unsecured bond or obligation of a corporation.

A **convertible bond** is one exchangeable at some time and on certain terms for common stock.

A participating bond, in addition to interest, is entitled to some participation in profits.

A **short-term note** runs from 1 to 5 years. If money is needed to meet a temporary emergency, short-term notes are issued instead of bond. Short-term notes are often issued because the market is not favorable for a long-term bond issue.

A **sinking fund** to pay off a bond issue when due is created by setting aside each year such portion of corporate earnings as will, on maturity of bonds, pay them off. This is especially necessary when the corporate property consists of diminishing or "wasting assets," as in case of oil, mining, and lumber companies.

UNDERWRITING.—If the corporation is large and managed by responsible men, the customary method of disposing of securities is to secure an underwriting agreement with a banking house, bankers, or dealers in securities, by which they agree to pay not less than a given price for the securities within a fixed period. If the underwriters are responsible, the corporation can count on the money at once and proceed with its plans. The full amount of issued securities will be sold, and the venture will not be crippled by getting only part of the amount required.

Usually an underwriting agreement is made with one banking house which invites others to join in the underwriting, sharing risks and profits. The resulting group is an **underwriting syndicate.** Commissions of such syndicates range from 1½% to 10%. They may be payable partly in securities. If the syndicate fails to sell the securities at an advanced price, it may lose heavily when compelled to pay the agreed price.

STOCK EXCHANGES.—When large issues of securities of established companies are to be marketed, it is usually advisable to list them on the stock exchange as soon as possible. A **stock exchange** is a meeting place for sellers and buyers of securities.

Stock exchanges are membership, unincorporated associations issuing no stock. They are practically clubs. Members pay dues, and usually secure membership by buying "seats" from retiring members. Applicants are passed upon by the membership committee, and may be rejected. Stock exchanges are found in all our large cities. They make their own rules. Securities must qualify before being listed and dealt in on the floor of the exchange.

Corporate Combinations

FORMS OF COMBINATION.—American business men have a faculty for combining if advantage is to be gained by co-operation. Combinations having been most frequently employed to enhance prices, to restrain competition, and to create monopolies, they have been the object of denunciation and adverse legislation. The **Interstate Commerce Act** of 1887 was intended to prevent combination of railroads to raise or maintain rates. The **Sherman Anti-Trust Act** of 1891 was directed against combinations in restraint of trade. Most states have similar laws against this abuse. Still the tendency to combine persists and has worked itself out in various forms, among which are:

1. Trusts
2. Holding companies
3. Pooling arrangements
4. Trade associations
5. Interlocking directorates
6. Consolidation and merger

Control of prices has been sought by informal but sometimes very effective arrangements, such as gentlemen's agreements, price-control understandings, "Gary dinners," and the like.

1. TRUSTS.—These, the first great combinations to attract public opprobrium, were formed by appointment of a board of trustees in whose hands was placed a majority of the stock of each corporation to be controlled. The trustees elected boards of corporate directors to manage their respective companies in the common interest.

Among early trusts of this kind were the Standard Oil Trust, the Sugar Trust, and the Bay State Gas Trust. The first two were declared illegal because of monopolistic and trade-restraining characteristics. Thereafter, various other forms of combination were used, and use of the word "trust" to describe a trade combination still continues. **Combination, trade combination,** or **industrial combination** is a better general term.

Trusts of this type should be distinguished from "business trusts," "express trusts," and "Massachusetts trusts," a legitimate form of association for business purposes; also from "voting trusts," by which, when desired to continue a corporation under the same management for a term of years, enough stock to elect a majority of directors may be placed in the hands of voting trustees with instructions for voting the trusteed stock.

After the courts decided that combinations to control an industry cannot be formed by putting stock of the companies to be controlled in the hands of a board of trustees, the plan fell into disrepute and is not now used.

2. HOLDING COMPANIES.—A holding company is a corporation formed to control other corporations by ownership of a majority of their voting stock. Under the common law one corporation cannot hold stock in another corporation except incidentally to save a debt. To buy stock in another corporation involves the purchasing corporation in a new and distinct enterprise. At common law this cannot be done.

Holding corporations in the modern sense came into existence in 1888, when New Jersey passed a law allowing corporations under its law to purchase, hold, sell, mortgage, and transfer stock and securities of other corporations, and to exercise the right to vote on such stock. Delaware and Maine followed, and in New York such rights may be had by making provision in the charter.

As courts had held that combinations cannot be formed by placing stock of corporations to be controlled in hands of trustees, this legislation provided a new plan by which a group of corporations could be unified. Enough stock of each corporation to be controlled is placed in the name of a holding company. This company votes the stock at the annual elections for such directors as can be relied upon to act as it directs or instructs them. It is not usually necessary to hold 51% of a corporation's outstanding stock to control it. If stock is scattered, 40%, or less, is sufficient. A holding corporation usually has full power to conduct the business or industry it is intended to control. It sometimes operates directly, buying or establishing its own factories. Usually those who organize the holding company retain only enough of its stock to insure control, selling the remaining shares to investors. By this plan only half the cost of control need be furnished by the promoters.

In the *Northern Securities Case* and in the cases against the Standard Oil Co. and the American Tobacco Co., the Supreme Court held that control of competing companies by a holding company in such manner as to violate the Sherman Anti-Trust Law was illegal. Where control exercised is not in restraint of trade, and does not lessen competition or tend to create a monopoly, use of

the holding company to form a combination is not illegal. This is the distinction between "good trusts" and "bad trusts."

It is desirable in many cases to effect combinations so that the business of the combined corporations may be conducted more economically. Many such combinations have been held not to be illegal, notably the United States Steel Corporation.

The **Clayton Act** of 1914, relating to corporations engaged in interstate commerce, specifically forbids acquisition by one corporation of the whole or any part of the stock of another corporation "where the effect may be substantially to lessen competition between the corporation whose stock is so acquired and the corporation making the acquisition, or to restrain such commerce in any section or community, or tend to create a monopoly of any line of commerce."

A useful and legitimate variety of the holding corporation is the **parent company and subcompanies.** If an invention is to be exploited, the parent corporation may hold the title to the patents, licensing subordinate companies in each state to handle the invention locally. Sometimes this is done to advantage by a manufacturing corporation desiring to establish selling organizations in each state. In such case it is possible to vary the stock arrangements to meet almost any desired situation.

Corporate stockholders have rights of individual stockholders, if it is legal for them to hold stock. Stock so held is personal property and is liable to taxation as such. The corporate stockholders share in dividends declared on the stock so held, and have full rights of representation and voting at stockholders' meetings. Such stock is voted, either in person or by proxy, by the trustee or the official in whose name it is held, or, if held in the name of the holding company, by such person as is formally designated by the directors to be its proxy.

3. POOLING ARRANGEMENTS.—Use of pools to prevent price-cutting and competition probably antedates use of the trust. In forming a pool, the component bodies retain their own organizations intact, but create a central body to exercise control over: (1) supply of the commodity, (2) market demand, or (3) selling price, or over two or all of these factors. The railroads first used them to avoid disastrous rate wars. Afterwards the plan was used in many large industrial combinations. The anti-trust laws bar their use at this time.

One form of pool operates by allotting a certain amount of business to each unit, then giving concerns manufacturing less than this a bonus based on how far they are below their limit. Concerns exceeding their allowance are fined in proportion to their excess. By thus keeping within the demand of the market, prices are maintained.

Another form of pool curtails output by limiting it, sometimes arranging to close down mills or factories to effect this end.

Another form divides the market, assigning certain territory to each member of the pool. At one time a pool of tobacco corporations and combinations had parceled out the world's markets among their members.

Another plan is to organize a sales corporation to which each member agrees to sell at something below the market price, or else to make the sales corporation its exclusive selling agent. This form has been legalized for all foreign trade under the Webb Act of 1918. Since then many such pools have been formed.

Another plan is to form a pool to control the visible supply of the commodity. This savors too much of speculation to be safe. In several cases it has brought its originators to grief.

The price-fixing pool has often been used. The drug business attempted it. The book trade did likewise, but came to grief in the courts.

Attempts have been made to control prices through ownership of basic patents by a central corporation regulating their use by the members of the pool, but the courts have condemned the plan. In fact, there is no plan by which a pool can be formed that will not come under condemnation of the law if it violates any of the provisions of the Sherman Anti-Trust Act.

4. TRADE ASSOCIATIONS.—A form of association that has had wide popularity is the **"trade association,"** or, on occasion, the **"open-price association."** Trade association is a broad term and cannot be closely defined. It is based on the theory that while most forms of combination are liable to government action as being violations of the anti-trust laws, an association to exchange information, promote better methods of business, and generally to promote the welfare of the particular industry would not be forbidden by law. It is based further on the belief that if full information as to prices charged, orders taken, bids made, and probable future markets is open to all concerns interested in the industry, prices tend to become uniform, and that an intelligent self-interest leads all to sell at about the same level of prices—hence the name "open-price associations."

Trade associations are loose central organizations of the principal corporations engaged in an industry, having for their object gathering and dissemination of trade information among members. They have no fixed form of organization and may be simple membership associations or may be incorporated under the membership corporation law of the state in which situated. They have rules governing membership, meetings, dues, reports, and the like. They maintain certain offices serving as association headquarters. Their principal executive is usually an able secretary who receives, tabulates, and distributes information as to prices, orders, supplies, and demand.

There is a wide range of useful activities for such associations. In most industries there is some organization of the kind to which the major portion of the leading corporations belong. Some associations have been condemned on the ground that they have enhanced prices and restrained competition.

The Supreme Court condemned practices of the American Hardwood Manufacturers' Association which involved not only interchange of trade information but holding of frequent meetings, withholding of price reports from buyers, analysis of trade conditions by an expert, and sending out of letters urging increases in price and restrictions on production, with resulting enhancement of price.

In the recent case of Gypsum Industries Association before the U. S. District Court, a consent decree was entered by which the parties were ordered to dissolve the association and were enjoined from doing anything forbidden by the anti-trust laws. They were then given permission to maintain a non-profit-making corporation for the general welfare of the members, which was to be limited to the following activities:

1. To advance and promote use of gypsum products.
2. To deal with engineering and trade problems incident to the industry.
3. To carry on educational work pertinent to the industry.
4. To furnish traffic information and to assist in transportation problems incident to the industry.
5. To deal with improved methods of plant and mine operation, sanitation, labor, plant, and mine development, and methods of accounting.
6. To maintain a credit bureau to furnish credit information.

The things prohibited by the injunction included about all the usual practices of combinations in restraint of trade.

5. INTERLOCKING DIRECTORATES.—It has been found possible to effect practical corporate combination by having common directors. A majority of common directors is not required for this purpose, but one or two in common are enough to enable two or more corporations effectively to act together to raise prices, restrain competition, and create a monopoly. At times a carefully worked out plan of interlocking directors has been carried out, resulting in a smoothly working combination. In other cases, the same result has happened almost incidentally where men engaged in similar business have become interested in several corporations conducting like undertakings.

To prevent this practice, the Clayton Act of 1914 prohibited directors and officers in banks and other financial institutions under the federal laws, with deposits and capital assets in excess of $5,000,000, from serving on any other similar bank or other financial institution, and prohibited any private banker or officer in a state bank or trust company from being a director in any United States banking association.

The Act also provided that no person should be a director in any two or more corporations in whole or in part engaged in interstate commerce, if any such corporation should have a working capital of over $1,000,000.

This eliminates forming corporate combinations on a scale large enough to be effective in regulating prices or creating monopolies.

6. CONSOLIDATION.—A consolidation or merger of corporations is effected by any of the following four methods:

1. Two or more corporations may be consolidated by statutory procedure in states where laws for the purpose have been enacted.

Such consolidation can be secured only where the statutes prescribe a way. It is the legal method of effecting a consolidation or merger. When this method is followed there is one new corporation which includes in itself all of the rights and property of the merged corporations. Railroads and other public utility corporations often combine by this statutory procedure. Ordinary business and manufacturing corporations can usually accomplish the same end by simpler procedure.

In nearly all states the laws provide for consolidation of non-competing railroads. Such statutes usually apply only to corporations engaged in the same or similar businesses. For instance, a non-competing gas company and an electric light company would be allowed to consolidate. In such cases it is usually specified that a majority, or two-thirds or three-fourths of the stockholders of each railroad or other public utility, must vote in favor of such a consolidation. In many states dissenting stockholders can require the corporation to buy their stock at an appraised valuation. If there is no statutory form for consolidation it can be authorized by unanimous vote of all stockholders.

Usual procedure for statutory consolidation is as follows:

(a) Agreement as to terms by directors of consolidating corporations.
(b) Submission of such agreement to stockholders of consolidating corporations at duly assembled meetings.
(c) Assent of stockholders by statutory majority.
(d) Filing of certified copies of the agreement and of the vote in its favor in the same offices in which the original charter of each of the consolidated companies was filed.

2. One corporation may purchase the entire assets of one or more corporations.

This makes it comparatively easy to combine ordinary business and manufacturing corporations. When desired to consolidate one or more existing corporations, it is possible to use one of the organizations as the permanent corporation, which buys up the assets of the one or more other corporations. It is also not costly to organize a new corporation to supplant all of the corporations to be consolidated.

When an ordinary corporation is to be absorbed into a consolidated corporation in this manner, it is necessary in most states that its stockholders unanimously agree to the sale. This often occasions no little trouble, as some stockholders are likely to object and refuse to sell their shares at a reasonable price. Some diplomacy is required in such cases, as there is no legal way to compel a stockholder to sell out or to vote to sell the corporate assets. When such a sale has been consummated, the corporation that has sold out may divide the price received among its stockholders and then dissolve. The price in such cases is usually wholly or in part in stock or other securities of the purchasing company; if these are divided out, those who receive the dividends become stockholders in the new company and there is usually no reason for keeping up the old company. This method, varied to suit the circumstances, is a practical method of consolidation or merger that can be used whenever all stockholders agree to it.

3. One corporation may lease the entire property of one or more corporations.

In case of a lease the old corporation may continue an inactive existence merely, receiving its rentals and paying them out in dividends to its stockholders. Sometimes the terms of the lease will be the guaranty of an assured dividend on the outstanding stock of the lessor corporation.

4. Consolidation may be effected by the use of a holding company.

When it is desired to secure unity of operations between two corporations, it may be attained by common ownership of a majority of the stock in each. This controlling stock may be held by one individual, by a partnership, by trustees, or by a holding corporation; the effect is the same. If this common control is exercised to enhance prices, to restrain competition and create a monopoly, or for any purpose forbidden by law, it may be destroyed by the proper legal proceedings. So long as it is used for legitimate purposes, it will not be disturbed.

REORGANIZATION.—When a corporation has become insolvent or financially embarrassed, but it has a name, property, franchises, trade-marks, or good-will worth saving, some effort is usually made to reorganize it. The term is a loose one and may be applied to any form of consolidation that has been described, or to an increase of stock to be sold for enough to clear its debts and allow it to start anew. It is in many cases necessary to get the creditors to agree to some adjustment or postponement of their claims. If this cannot be done some of the larger stockholders may raise enough money to buy in the assets of the corporation when they go at forced sale and then organize a new corporation. This new corporation has really no connection with the old. Sometimes such procedure is resorted to fraudulently, the corporation being deliberately allowed to become involved for the purpose of freezing out minority stockholders.

Corporate Forms

Form 1. Charter

CERTIFICATE OF INCORPORATION

of the

HOLLIS BAKERY

First—The name of this corporation is

"Hollis Bakery"

Second—The location of its principal office in the State of Delaware is to be in the City of Wilmington, County of New Castle. The agent in charge thereof is James L. MacPherson.

Third—The objects and purposes for which this corporation is formed are to do any and all of the things herein set forth, as fully and to the same extent as natural persons might or could do, and in any part of the world, viz.:

(a) To manufacture, buy, sell, pack, prepare, and generally to deal in and with breads, biscuits, crackers, cakes, Italian paste, confectionery, cereals, coffees, teas, dried fruits, and foods and food products, and materials of all kinds, either raw or manufactured, that may be used in foods and food products, or for the packing, adapting, preparing, or preserving of such foods, or food products; and generally to mix, adapt, refine, prepare, preserve, manufacture, and dispose of all such goods, wares, merchandise, and materials, either in original packages or in such cans, jars, boxes, cartons, or other containing packages as may be found necessary or desirable.

(b) To purchase, lease, or otherwise acquire lands, buildings, tenements, and factories, in Delaware or elsewhere, for the plants, offices, workshops, warehouses, laboratories, and manufactories of the Company, and to purchase, lease, or otherwise acquire tools, implements, engines, machinery, apparatus, fixtures, and conveniences of all kinds, for the manufacture, manipulation, preparation, preservation, packing, and handling of the materials and products of the Company.

(c) To apply for, obtain, purchase, lease, or otherwise acquire, and to register, hold, own, and use any and all trademarks, trade secrets, processes, formulas, inventions, and improvements capable of being used in connection with the work of the Company, whether secured under letters patent in the United States or elsewhere or otherwise; and to use, operate, and manufacture under the same, and to sell, assign, grant licenses in respect of, or otherwise dispose of and turn the same to the account and profit of the Company.

(d) To do any and all things set forth in this certificate as objects, purposes, powers, or otherwise to the same extent and as fully as natural persons might do, and in any part of the world, as principals, agents, contractors, trustees, or otherwise, and either alone or in company with others.

(e) To have offices, conduct its business, and promote its objects within and without the State of Delaware, in other States, the District of Columbia, the territories and colonial dependencies of the United States, and in foreign countries, without restriction as to place or amount.

Fourth—The amount of the total authorized capital stock of this corporation is Five Hundred Thousand Dollars ($500,000), divided into Five Thousand (5,000) Shares of the par value of One Hundred Dollars ($100) each.

The amount of capital stock with which this corporation will commence business is the sum of One Thousand Dollars ($1,000).

Fifth—The names and places of residence of each of the original subscribers to the capital stock, and the number of shares subscribed for by each, are as follows:

NAMES	RESIDENCES	NO. OF SHARES
HENRY A. HOLLIS	Cincinnati, Ohio	3
JOHN H. MASON	" "	3
FRANK MENCKEN	" "	4

Sixth—The existence of this corporation is to be perpetual.

Seventh—The private property of the stockholders shall not be subject to the payment of corporate debts to any extent whatever.

Eighth—In furtherance, and not in limitation of the powers conferred by statute, the Board of Directors are expressly authorized:

> To make, alter, amend, and repeal the by-laws; to fix the amount to be reserved for working capital, and to authorize and cause to be executed mortgages and liens, without limit as to amount, upon the property and franchises of this corporation.
>
> With the consent in writing, and pursuant to a vote of the holders of a majority of the capital stock issued and outstanding, to dispose in any manner of the whole property of this corporation.
>
> To determine from time to time whether and to what extent the accounts and books of this corporation, or any of them, shall be open to the inspection of the stockholders; and no stockholder shall have any right of inspecting any account, or book, or document of this corporation, except as conferred by law, or the by-laws, or by resolution of the stockholders.

The stockholders and directors shall have power to hold their meetings and keep the books, documents, and papers of the corporation outside of the State of Delaware, at such places as may be from time to time designated by the by-laws or by resolution of the stockholders or directors, except as otherwise required by the laws of Delaware.

It is the intention that the objects, purposes, and powers specified in the third paragraph hereof shall, except where otherwise specified in said paragraph, be nowise limited or restricted by reference to or inference from the terms of any other clause or paragraph in this certificate of incorporation, but that the objects, purposes, and powers, specified in the third paragraph and in each of the clauses or paragraphs of this charter shall be regarded as independent objects, purposes, and powers.

We, the undersigned, being all the original subscribers to the capital stock hereinbefore named, for the purpose of forming a corporation under the laws of the State of Delaware, do make, file, and record this certificate, and do hereby certify that the facts herein stated are true; and we have accordingly hereunto set our respective hands and seals, this sixteenth day of January, A. D. 19—.

HENRY A. HOLLIS [SEAL]
JOHN H. MASON [SEAL]
FRANK MENCKEN [SEAL]

In presence of
JAMES BEHRENS
SAMUEL S. MILLER

STATE OF DELAWARE
COUNTY OF NEW CASTLE } ss..

Be It Remembered, that on this sixteenth day of January, A. D. 19—, personally came before me, Howard Franklin, a Notary Public in and for the county and state aforesaid, Henry A. Hollis, John H. Mason, and Frank Mencken, parties to the foregoing certificate of incorporation, known to me personally to be such, and severally acknowledged the said certificate to be the act and deed of the signers respectively, and that the facts therein stated are truly set forth.

Given under my hand and seal of office the day and year aforesaid.

HOWARD FRANKLIN,
Notary Public

{NOTARIAL SEAL}

Form 2. By-Laws

BY-LAWS

of the

COLLINWOOD MOTORS COMPANY

Newark, N. J.

ARTICLE I. STOCK

1. **Certificates of Stock** shall be issued in numerical order from the stock certificate book to each stockholder of record whose stock has been paid in full, be signed by the President and Treasurer, and be sealed by the Secretary with the corporate seal. A record of each certificate issued shall be kept on the stub thereof.

2. **Transfers of Stock** shall be made only upon the books of the Company, and before a new certificate is issued the old certificate must be surrendered for cancellation. The stock books of the Company shall be closed for transfer twenty days before general elections and ten days before dividend days.

3. **The Treasury Stock** of the Company shall consist of such issued and outstanding stock of the Company as may be donated to the Company or otherwise acquired, and shall be held subject to disposal by the Board of Directors. Such stock shall neither vote nor participate in dividends while held by the Company.

ARTICLE II. STOCKHOLDERS

1. **The Annual Meeting** of the stockholders of this Company shall be held in the principal office of the Company, in New York City, on the second Monday in January of each year, at 3 P.M. if not a legal holiday, but if a legal holiday, then on the next business day following.

2. **Special Meetings** of the stockholders may be called at the principal office of the Company at any time by resolution of the Board of Directors, or upon written request of stockholders holding one-third of the outstanding stock.

3. **Notice of Meetings,** written or printed, shall be prepared and mailed to the last known post-office address of each stockholder not less than ten days before any regular or special meeting of stockholders, and if for a special meeting, such notice shall state the object or objects thereof. No failure of or irregularity of notice of any regular meeting shall invalidate such meeting or any proceeding thereat.

4. **A Quorum** at any meeting of the stockholders shall consist of a majority of the voting stock of the Company, represented in person or by proxy. A majority of such quorum shall decide any question that may come before the meeting.

5. **The Election of Directors** shall be held at the annual meeting of stockholders, and shall, after the first election, be conducted by two inspectors of election, appointed by the President for that purpose. The election shall be by ballot and each stockholder of record shall be entitled to cast one vote for each share of stock held by him.

6. **The Order of Business** at the annual meeting, and, as far as possible, at all other meetings of the stockholders, shall be:

   1. Calling of roll
   2. Proof of due notice of meeting
   3. Reading and disposal of any unapproved minutes
   4. Annual reports of officers and committees
   5. Election of directors
   6. Unfinished business
   7. New business
   8. Adjournment

ARTICLE III. DIRECTORS

1. **The Business and Property** of the Company shall be managed by a Board of five Directors, who shall be stockholders of the Company and who shall be elected annually by ballot by the stockholders for the term of one year, and shall serve until the election

and acceptance of their duly qualified successors. Any vacancies may be filled by the Board for the unexpired term. Directors shall receive no compensation for their services as such.

2. **The Regular Meetings** of the Board of Directors shall be held in the principal office of the Company in New York City on the third Tuesday of each month, at 3 P.M. if not a legal holiday, but if a legal holiday, then on the next business day following.

3. **Special Meetings** of the Board of Directors may be held in the principal office of the Company in New York City at any time on call of the President, or of any three members of the Board, or may be held at any time and place without notice, by unanimous written consent of all the members, or with the presence and participation of all members at such meeting.

4. **Notices** of both regular and special meetings, save when held by unanimous consent or participation, shall be mailed by the Secretary to each member of the Board not less than five days before any such meeting, and notices of special meetings shall state the purposes thereof. No failure or irregularity of notice of any regular meeting shall invalidate such meeting or any proceeding thereat.

5. **A Quorum** at any meeting shall consist of a majority of the entire membership of the Board. A majority of such quorum shall decide any question that may come before the meeting.

6. **Officers of the Company** shall be elected by ballot by the Board of Directors at their first meeting after the election of Directors each year. If any office becomes vacant during the year, the Board of Directors shall fill the same for the unexpired term. The Board of Directors shall fix the compensation of the officers and agents of the Company.

7. **The Order of Business** at any regular or special meeting of the Board of Directors shall be:

1. Reading and disposal of any unapproved minutes
2. Reports of officers and committees
3. Unfinished business
4. New business
5. Adjournment

Article IV. Officers

1. **The Officers of the Company** shall be a President, a Vice-President, a Secretary, and a Treasurer, who shall be elected for one year and shall hold office until their successors are elected and qualify. The position of Secretary and Treasurer may be united in one person.

2. **The President** shall preside at all meetings, shall have general supervision of the affairs of the Company, shall sign or countersign all certificates of stock, contracts, and other instruments of the Company authorized by the Board of Directors, except as otherwise directed by the board; shall make such reports to the Directors and stockholders as he may deem necessary or as may be required of him, and perform all such other duties as are incident to his office or are properly required of him by the Board of Directors. In the absence or disability of the President, the Vice-President shall exercise all his functions.

3. **The Secretary** shall issue notices for all meetings of stockholders and directors, shall keep their minutes, shall have charge of the seal and the corporate books, shall sign, with the President, such instruments as require such signature, and shall make such reports and perform such other duties as are incident to his office, or are properly required of him by the Board of Directors.

4. **The Treasurer** shall have the custody of all moneys and securities of the Company and shall keep regular books of account and balance the same each month. He shall sign or countersign such instruments as require his signature, shall perform all duties incident to his office or that are properly required of him by the Board, and shall give bond for the faithful performance of his duties in such sum and with such sureties as may be required by the Board of Directors.

Article V. Dividends and Finance

1. **Dividends** shall be declared from the surplus profits of the Company at such times as the Board of Directors shall direct, and no dividend shall be declared that will impair the capital of the Company.

2. **The Moneys** of the Company shall be deposited in the name of the Company in such banks or trust companies as the Board of Directors shall designate, and shall be drawn out by checks signed by the Treasurer and countersigned by the President.

ARTICLE VI. SEAL

1. **The Corporate Seal** of the Company shall consist of two concentric circles between which is the name of the Company and in the center shall be inscribed "Incorporated 1923, New Jersey," and such seal, as impressed on the margin hereof, shall be the corporate seal of the Company.

ARTICLE VII. AMENDMENTS

1. **These By-Laws** may be amended, repealed or altered, in whole or in part, by a majority vote of the whole outstanding stock of the Company, at any regular meeting of the stockholders, or at any special meeting where such action has been announced in the call and notice of such meeting.
2. **The Board of Directors** shall not alter or repeal any by-laws adopted by the stockholders of the Company, but may adopt additional by-laws in harmony therewith.

Form 3. Subscription Blank

THE CORD-TREAD TIRE COMPANY

175 Montgomery St.

Jersey City, N. J.

To be Incorporated under the Laws of New Jersey
for the Manufacture of Automobile Tires
By FRANK ALSTON, JOHN STONE, AND HOWARD COLE

Capital Stock..........$500,000
Shares..........$10 each

I hereby subscribe for..............shares of the capital stock of the Cord-Tread Tire Company at the par value thereof, and agree to pay Twenty-Five Per Cent (25%) of such subscription on demand of the Treasurer as soon as said Company is incorporated, and Twenty-Five Per Cent (25%) on demand of the Treasurer of the Company at any time after ninety days from the incorporation of said Company; the remainder of said subscription to be paid at such times and in such amounts, not exceeding ten per cent of said subscription in any one month, as may be required by the Board of Directors of said Company.

....

Dated at..........................

....

The right is reserved to reject or prorate any or all subscription

---

The reservation of the right to reject or prorate subscriptions enables the parties in control to exclude undesirable subscribers and also to scale or reject applications in case of oversubscriptions.

Form 4. Stock Certificate—Preferred Stock

Certificate No. 15

For 10 Shares.
Dated May 4, 19—

Issued to
Warren Calvert,
20 Broad St.,
New York City

Issued against surrendered Certificate No. (original issue).

—

Received the above certificate this 4th day of May, 19—.

WARREN CALVERT

This Certificate No. 15, canceled 19

Certificates issued in its stead as follows:

No............for.......... Shares
No............ " .... "
No............ " .... "

No. 15 | Incorporated under the Laws of The State of New Jersey | 10 Shares

THE FRANCONIA NURSERY COMPANY

—

Capital Stock....................$150,000
Common Stock..............$100,000
Preferred Stock.............$ 50,000

Full-paid and Non-assessable

—

THIS IS TO CERTIFY that Warren Calvert is the owner of Ten Shares of the Preferred Stock of The Franconia Nursery Company, transferable only on the books of the Company by the said owner, in person or by duly authorized attorney, upon surrender of this Certificate properly indorsed.

The preferred stock represented by this certificate is entitled to an annual dividend of Seven Per Cent (7%) payable out of the net profits of the Company before any dividend is paid upon the common stock. Should the net profits in any year be insufficient to pay said preferred dividend, either in whole or in part, any unpaid portion thereof shall become a charge against the net profits of the Company, and shall be paid out in full of said net profits before any dividends are paid upon the common stock.

Said preferred stock is subject to redemption at the option of the Company at any time after Ten Years from the first day of April, 19—, upon payment of One Hundred and Five Dollars per share and any accumulated dividends.

Said preferred stock is not entitled to vote at stockholders' meetings of the Company, nor to participate in profits beyond its fixed, preferential, cumulative, annual dividend of Seven Per Cent.

{CORPORATE SEAL}

Witness the Seal of the Company and the signatures of its duly authorized officers this fourth day of May, 19—.

W. S. PARSONS,
Treasurer

GEORGE P. CHAPMAN,
President

Shares, $100 each

Form 5. Stock Certificate—Common Stock

Certificate No. 25

For 20 shares.
Issued to:
Roger P. Sherman,
235 Greenwood Ave.,
Newark, N. J.

Dated March 10, 19—.

From whom transferred:
Original issue.

Dated March 10, 19—.

No. Original Certificates	No. Original Shares	No. of Shares Transferred

Received Certificate No. 25 for Twenty Shares this 12th day of March, 19—.

ROGER P. SHERMAN

No. 25 20 Shares

Incorporated under the Laws of

The State of New Jersey

THE FRANCONIA NURSERY COMPANY

Capital Stock....................$150,000
Common Stock..............$100,000
Preferred Stock..............$ 50,000

Full-paid and Non-assessable

THIS IS TO CERTIFY that Roger P. Sherman is the owner of Twenty Shares of the Capital Stock of The Franconia Nursery Company, transferable only on the books of the Company by the said owner thereof in person or by duly authorized attorney, upon surrender of this Certificate properly indorsed.

{CORPORATE SEAL} Witness the Seal of the Company and the signatures of its duly authorized officers this tenth day of March, 19—.

W. S. PARSONS,
Treasurer

GEORGE P. CHAPMAN,
President

Shares, $100 each

Form 6. Stock Certificate—No-Par-Value Shares

No. 35 100 Shares

Incorporated under the Laws of

the State of Delaware

KINSEY-MORGAN MOTORS COMPANY

CAPITAL STOCK { Common Stock, 10,000 shares without nominal or par value
Preferred Stock, 1,000 shares of $100 each

Full-paid and Non-assessable

THIS IS TO CERTIFY that Henry P. Williams is the owner of One Hundred Shares of the no-par-value Common Stock of the Kinsey-Morgan Motors Company, transferable on the books of the Company by the owner thereof in person or by duly authorized attorney, upon surrender of this certificate properly indorsed.

{CORPORATE SEAL} Witness the Seal of the Company and the signatures of its duly authorized officers this tenth day of January, 19—.

HOWARD MCALPIN,
President

FRANK W. KINSEY,
Treasurer

The following assignment is complete, the parts which have been filled in being indicated by parentheses:

Form 7. Assignment of Stock

For Value Received, (I) hereby sell and transfer unto (John J. McMillan of New York City, Twenty-five) Shares of the Capital Stock represented by the within Certificate, and do hereby irrevocably constitute and appoint (Harry S. Gunnison) my attorney to transfer the said stock on the books of the within named Company with full power of substitution in the premises.

Dated (March 2, 19—) (HOWARD S. ALLEN)

In presence of
(ANNA H. MARSHALL)

Usually the secretary of the company is designated as the attorney who is to make the transfer on the books of the company, though any other suitable person might be named instead.

Form 8. Call for First Meeting of Stockholders

THE BARSTOW MOTOR CORPORATION

CALL AND WAIVER OF NOTICE

FOR

FIRST MEETING OF STOCKHOLDERS

We, the undersigned, being all of the incorporators of the above-named corporation and all of the subscribers to its capital stock entitled to notice of said meeting, do hereby call the first meeting of the stockholders of said corporation to be held in the

office of George H. Madison, 845 Broad St., Newark, New Jersey, at 3 P.M., on the 5th day of January, 19—, for the purpose of receiving charter, adopting by-laws, electing directors, considering and acting upon a proposal for the issue of the capital stock of the corporation in exchange for property, and the transaction of all such other business as may be necessary or convenient in connection with the organization of said corporation, and we do hereby waive all requirements as to notice or publication of the time, place and purposes of this first meeting and do consent to the transaction thereat of any and all business pertaining to the affairs of the Company.

Dated Newark, N. J., December 28, 19—.

(*Signatures of all Incorporators*)

This call and waiver must be signed by every person entitled to be present at the meeting, although the presence of any person not signing the waiver would be held in itself to be a waiver of notice and an acceptance of the call.

Form 9. Minutes of Stockholders' First Meeting

THE BARSTOW MOTOR CORPORATION

of New Jersey

MINUTES OF FIRST MEETING OF STOCKHOLDERS

Held January 5, 19—

Pursuant to written call and waiver of notice signed by all of the incorporators, the first meeting of stockholders of the Barstow Motor Corporation was held in the office of George H. Madison, 845 Broad Street, Newark, New Jersey, at 3 o'clock in the afternoon, on the 5th day of January, 19—.

The meeting was called to order by Howard Milliken, and on motion, George H. Barstow was appointed Chairman of the meeting and Sargent Davis was appointed its Secretary.

The Secretary presented and read the call and waiver of notice pursuant to which the meeting was held. On motion it was ordered to be entered in the Minute Book following the minutes of the meeting.

The proxy of Frank Harris appointing James C. McCormick his representative was presented, and was ordered to be filed.

There were present in person:

NAMES	NO. OF SHARES
George H. Barstow	1
Howard Milliken	1
Sargent Davis	1
Wilson P. Noble	1

There were present by proxy:

NAME	NAME OF PROXY	NO. OF SHARES
Frank Harris	James C. McCormick	1

The Chairman presented a certified copy of the Certificate of Incorporation and stated that the original had been recorded in the office of the Clerk of Essex County on the 3rd day of January, 19—, and was filed in the office of the Secretary of State at Trenton, on the 4th day of January, 19—, and that the organization tax, and statutory filing and recording fees have been duly paid. On motion it was ordered that the said Certificate of Incorporation be entered on the first pages of the Book of Minutes.

The Secretary presented a form of By-Laws prepared by counsel for the Company, which was read article by article, and as a whole unanimously adopted and ordered to be entered in the Book of Minutes immediately following Certificate of Incorporation.

The Chairman announced that the next business in order was the election of seven directors as provided in the By-Laws, and thereupon appointed Messrs. Harold Conrow and John Miner inspectors. Said inspectors then proceeded to open the polls and receive ballots. All the stockholders present in person or by proxy having voted, the inspectors reported that ballots were cast as follows:

FOR DIRECTORS	VOTES
George H. Barstow	5
Howard Milliken	5
Sargent Davis	5
Wilson P. Noble	5
Frank Harris	5
Harvey Crawford	5
Ellis C. Sherman	5

and that the gentlemen named were therefore duly elected directors of the Company. It was ordered that the report of the inspectors be entered in the Minute Book following the minutes of the meeting.

On motion duly made and seconded, the following resolution was unanimously adopted:

> Resolved, That the principal office of this Company in the State of New Jersey shall be at No. 845 Broad Street, Newark, and the agent in charge upon whom process may be served, shall be George H. Madison.

The Secretary presented a waiver of notice of assessment and of the time and place of payment thereof signed by all the incorporators. The waiver was ordered to be entered in the Minute Book following the minutes of the meeting.

The Secretary presented a proposal from George P. Willis of Montclair, New Jersey, offering to assign to the Company in exchange for its entire common stock, the United States letters patent granted him for motors of the internal combustion type, together with his agreement to assign to the Company any future inventions or improvements made by him in motors of the internal combustion type.

Said proposal was ordered received and the following resolution in regard thereto was moved, seconded and unanimously adopted:

> Whereas, George P. Willis, for and in consideration of the issue to his order of the entire common stock of this Company of the par value of Two Hundred Thousand Dollars ($200,000), has offered to sell and assign to this Company the United States right for his improvements in motors of the internal combustion type, together with his agreement to assign to the company all future improvements and inventions in motors of the internal combustion type, all as set forth in his written proposal submitted to this meeting; and
>
> Whereas, It appears to the stockholders of this Company that such property is necessary for the business and lawful purposes of the Company, and that the same is of the reasonable value of Two Hundred Thousand Dollars ($200,000);
>
> Now, Therefore, Be It Resolved, That the Board of Directors of this Company be and hereby are authorized and empowered and directed to accept the said proposition and to issue the said common stock of this Company in exchange for the said letters patent and agreement of the said George P. Willis.

There being no further business, the meeting was declared adjourned.

George H. Barstow,
Chairman

Sargent Davis,
Secretary

In pursuance of the motions of the preceding minutes, the following forms are entered in the minutes:

1. Certificate of Incorporation
2. By-Laws
3. Call and Waiver of Notice
4. Report of Inspectors of Election
5. Waiver of Notice of Assessment

Sargent Davis,
Secretary

Important instruments received during the course of a meeting are frequently ordered embodied in the minutes or entered in the minute book immediately following the minutes. There is no legal objection to either arrangement. The minutes are, however, clearer and more closely connected when the instruments are appended instead of being brought into the body of the minutes.

Form 10. Call for First Directors' Meeting

CALL FOR FIRST MEETING OF DIRECTORS

of the

BARSTOW MOTOR CORPORATION

We, the undersigned, Directors of the Barstow Motor Corporation, hereby call the first meeting of the Directors of said Company to be held in the office of George H. Madison, at 4 P.M. on the 5th day of January, 19—, for the purpose of electing officers acting upon a proposal to assign property to the Company in exchange for stock, and doing all such other things as may be necessary or desirable in connection with the organization of the Company and the promotion of its business.

(*Signatures of all directors*)

New York City,
December 30, 19—.

At this first meeting of directors, officers are to be elected and various details connected with the commencement of the corporate business are to be attended to, including the taking over or purchase of property to be acquired by the new corporation. The following minutes are of a New Jersey corporation and comply with the requirements of that state. They may easily be adapted to meet requirements of other states.

Form 11. Minutes of Directors' First Meeting

THE BARSTOW MOTOR CORPORATION

of New Jersey

MINUTES OF FIRST MEETING OF DIRECTORS
Held January 5, 19—

Pursuant to written call and waiver of notice, the Board of Directors of The Barstow Motor Corporation held its first meeting in the office of George H. Madison, 845 Broad Street, Newark, New Jersey, at 4 P.M., on the 5th day of January, 19—.

Howard Milliken called the meeting to order and on motion, George H. Barstow was appointed Chairman, and Sargent Davis was appointed Secretary of the meeting.

There were present:

George H. Barstow
Howard Milliken
Sargent Davis
Wilson P. Noble
Harvey Crawford
Ellis C. Sherman

constituting a quorum of the Board. Absent: Frank Harris.

The Secretary presented the call and waiver of notice signed by all the Directors, pursuant to which the meeting was held. It was ordered spread upon the Minute Book immediately following the minutes of the meeting.

The Chairman announced the first business in order to be the election of officers to serve for the remainder of the corporate year and until the election of their successors, and appointed Messrs. Howard Milliken and Ellis C. Sherman tellers to conduct the election. The votes of those present were duly cast by ballot, resulting in the unanimous election of the following officers:

President....................George H. Barstow
Vice-President....................Frank Harris
Secretary........................Sargent Davis
Treasurer....................Harvey Crawford

It was ordered that the Secretary be sworn and subscribe a written oath of office, and that said oath be spread upon the Minute Book immediately following the minutes of the present meeting. The Secretary thereupon took said oath and entered upon the discharge of his duties.

It was ordered that the Treasurer give bond as provided in the by-laws, in the sum of Five Thousand Dollars ($5,000), the form and sureties of same to be approved by the Board of Directors. The Treasurer thereupon submitted a bond signed by himself as principal and by the Fidelity Surety Company of Maryland as surety. The bond as presented was approved and ordered to be filed in the custody of the Secretary of the Company.

Upon motion duly made and seconded the following resolutions were unanimously adopted:

> Resolved, That the officers of the Company be authorized to lease an office for the use of the Company at 80 Broadway, New York City, the rental thereof not to exceed One Hundred and Fifty Dollars ($150) per month, and that the meetings of the Board of Directors be from time to time held there or at the designated office of the Company in the State of New Jersey as the Board of Directors may direct.
>
> Resolved, That the Treasurer be and hereby is authorized and instructed to open an account for the Company with the Irving National Bank of New York City, and to deposit therein all funds of the Company coming into his possession, such account to be in the name of the Company and funds deposited therein to be withdrawn only by check signed by the Treasurer and countersigned by the President.
>
> Resolved, That certificates for common and preferred stock as submitted to the Board and identified by the signature of the President, be and hereby are adopted as the stock certificates of the Company, and that the same be spread on the pages of the Minute Book immediately following the minutes of the present meeting.
>
> Resolved, That the Secretary be instructed to procure Five Hundred (500) certificates of common stock and Five Hundred (500) certificates of preferred stock in form as adopted, also a corporate seal as provided in the by-laws, and in addition thereto such records, stock and transfer books, books of account, and stationery and office supplies as may seem necessary for the proper conduct of the Company's operations and business
>
> Resolved, That the Treasurer be hereby authorized and instructed to pay from the Company funds all expenses properly incurred in connection with the incorporation of the Company, the total of such payments not to exceed Eight Hundred Dollars ($800).
>
> Resolved, That an assessment of One Hundred Per Cent (100%) be levied upon the shares of stock subscribed for by the incorporators as shown by the certificate of incorporation.
>
> Resolved, That the Secretary prepare the certificate of election of directors and officers required by the New Jersey statutes, and that the proper officers of the Company execute and file the same in the office of the Secretary of State of New Jersey within thirty days from date, and that a copy thereof be spread upon the Minute Book immediately following the minutes of the present meeting.

The President then brought to the attention of the meeting (1) the written proposal of Mr. George P. Willis of Montclair, New Jersey, to transfer and assign his patents for improvements in motors of the internal combustion type to the Company, together with an agreement to assign all future inventions and improvements in motors of the internal combustion type made by him, in exchange, and full payment for the entire common stock of the Company; and (2) the resolution of the stockholders approving said proposal and instructing the Board of Directors to accept the same.

Mr. Willis' proposal was ordered received and spread upon the Minute Book immediately following the minutes of the meeting, and on motion duly made and seconded the following resolution relating thereto was unanimously adopted.

> WHEREAS, The Patents and agreement offered by George P. Willis in exchange for the entire common stock of this Company is adjudged by this Board to be of the reasonable value of Two Hundred Thousand Dollars ($200,000) and to be necessary for the use and lawful purposes of this Company:
>
> NOW, THEREFORE, BE IT RESOLVED, That the said proposed assignment of Letters Patent and the agreement for the assignment of future rights and patents in exchange for the entire common stock of this Company, as set forth in the said proposition of George P. Willis and spread upon the Minute Book of this Company is hereby accepted and the proper officers of the Company are hereby authorized and instructed to receive the duly executed assignments and agreements of said George P. Willis in form approved by counsel for the Company, and to issue in exchange therefor the entire common stock of the Company consisting of Two Thousand (2,000) Shares of the par value of One Hundred Dollars ($100) per share, to such person or persons as may be designated by the written orders of the said George P. Willis, and to do all other things necessary and convenient to consummate the said exchange and issue of stock for property.

There being no further business, the meeting was adjourned.

SARGENT DAVIS,
Secretary

GEORGE H. BARSTOW,
President

In pursuance of the motions of the preceding minutes, the following forms are hereunto appended:

1. Call and Waiver of Notice
2. Secretary's Oath of Office.
3. Report to Secretary of State.
4. Forms of Stock Certificates—Common and Preferred
5. Written Proposal of George P. Willis to Exchange Patents for the Common Stock of the Company.

SARGENT DAVIS,
Secretary

Form 12. Notice of Annual Meeting

HARMON PUBLISHING COMPANY

765 Main Street, Dover, Delaware

May 1, 19—

MR. FRANCIS H. JAMIESON,
336 Ocean Ave., Atlantic City, N. J.

DEAR SIR:

You are hereby notified that the annual meeting of the stockholders of the Harmon Publishing Company will be held at the office of the Company in Dover, Delaware,

on Tuesday, May 15, 1923, at 10 A.M., for the elections of five Directors for the ensuing year and for the transaction of such other business as may come before the meeting.

The stock transfer books of the Company will be closed at 3 P.M., May 5, 19—, and remain closed until 10 A.M., May 16, 19—.

Respectfully,

JAMES H. HOWARD,

Secretary

Notice of the annual meeting must be sent out in accordance with the requirements of the by-laws.

Form 13. Outline Minutes for Annual Meeting

HARMON PUBLISHING COMPANY

MINUTES OF ANNUAL MEETING
Held May 15, 19—

Meeting called to order at..........A.M., by.................................
who presided over meeting. Officiating Secretary..................................

Present at meeting in person.....................................Shares. By Proxy.................Shares. Total.................Shares. Necessary for quorum, 751 Shares.

Copy of notice of meeting submitted with Secretary's certificate of due service attached. Ordered spread upon minutes.

Minutes of previous meeting read and.....................................

Annual Reports:
President's
Treasurer's
Special

Election of Directors. Nominated:
....
....
....

Inspectors of Election:
....
....

Results:
New business:

At the expiration of the specified term the following proxy becomes null and void without formal revocation or other action on the part of the maker.

Form 14. Proxy—Time Limited

PROXY

I, the undersigned, do hereby constitute and appoint Henry M. Williams my true and lawful attorney to represent me at all meetings of the stockholders of the Carney Falls Power Company held on or prior to the 15th day of June, 19—, and do hereby

authorize and empower him for me and in my name and stead to vote at such meetings upon the stock now standing in my name on the books of said Company, and I hereby grant my said attorney all the power at said meetings that I should myself possess if personally present thereat.

Witness my signature and seal this 1st day of February, 19—.

SAMUEL B. FREMONT [L. S.]

In the presence of
J. J. MASTERSON

Form 15. Revocation of Proxy

REVOCATION OF PROXY

KNOW ALL MEN BY THESE PRESENTS:

That I, the undersigned, do hereby revoke and annul any and all proxies or powers of attorney heretofore given by me, authorizing or empowering any person or persons to represent me, or vote in my name and stead or act for me in any way whatsoever at any meeting or meetings of the stockholders of the Carney Falls Power Company.

Witness my signature and seal this 10th day of May, 19—.

DANIEL H. RONALDS [L. S.]

In the presence of
JOHN H. DUNN

The foregoing revocation of outstanding proxies is sweeping in its terms. If some particular proxy is to be excepted from the general revocation, such proxy may be specifically reserved, or otherwise the revocation may itself be limited by its terms to the one or more proxies to be revoked, in which case any other outstanding proxies are not affected.

The following is a simple form of resolution authorizing the treasurer to open a bank account. It should be certified before submission to the bank.

Form 16. Directors' Resolution to Open Bank Account

RESOLVED, That the Treasurer be and hereby is authorized and instructed to open an account for the Company with the Irving National Bank of New York City, and to deposit therein all funds of the Company coming into his possession, such account to be in the name of the Company and funds deposited therein to be withdrawn only by check signed by the Treasurer and countersigned by the President.

Form 17. Directors' Resolution Authorizing Contract

RESOLVED, That the President and Secretary be and hereby are authorized and instructed to enter into a Contract with the Wilbur Collins Construction Company on behalf of this corporation, for the erection of a power house, the construction of said power house to be in accordance with the plans and specifications on file in the office of this corporation, and the cost thereof not to exceed Twenty-Five Thousand Dollars ($25,000), payment thereof to be made as set forth in the written proposition heretofore submitted to this corporation by the said Wilbur Collins Construction Company.

Form 18. Dividend Notice—Common Stock

OFFICE OF
AMERICAN DREDGING COMPANY

No. 145 BROADWAY, NEW YORK CITY,
April 4, 19—

QUARTERLY COMMON STOCK DIVIDEND No. 23

The Directors of the American Dredging Company have this day declared a dividend of Two Per Cent on the Common Capital Stock of the Company, payable May 15, 19—, to stockholders of record April 28, 19—. The books of the Company for the transfer of Common Stock will be closed at 3 P.M., April 28, 19—, and will be reopened May 2, 19—.

M. W. ERICKSON,
Treasurer

Form 19. Dividend Notice—Common and Preferred Stock

AMERICAN RADIATOR COMPANY
PREFERRED DIVIDEND
COMMON DIVIDEND

A dividend of one and three-quarters per cent., being the 92nd consecutive quarterly dividend, has been declared on the Preferred Stock, payable February 15, 19—, to stockholders of record close of business February 1, 19—.

A dividend of One Dollar per share, being the 70th consecutive quarterly dividend, has been declared on the Common Stock, payable March 31, 19—, to stockholders of record close of business March 15, 19—.

The Transfer Books will not close.

WETMORE HODGES,
Secretary

When the corporate signature is affixed to important instruments, usually—though not necessarily—two or more official signatures are employed. The seal is also usually affixed even when not legally necessary. It is to be remembered that seals were used before signatures and for many years corporations used seals, unaccompanied by written signatures, in attestation of their acceptance of the instruments to which their seals were affixed.

Form 20. Corporate Signature—Formal

WESTERN CHEMICAL COMPANY,
By JOSEPH H. MCCLEARY,
President
FREDERICK WELLMAN,
Secretary

{CORPORATE SEAL}

The corporate signature may be legally affixed by any corporate official or agent authorized thereto by the directors or by-laws. In all current business however, where but one signing officer is desired, the president is usually designated, unless the transaction pertains specially to the department of some other official.

Signatures affixed to formal instruments are customarily preceded by an explanatory statement termed a "testimonium clause." Common forms of testimonium clauses follow.

Form 21. Testimonium Clauses—Corporate Signature—Seal Attested

(1) IN WITNESS WHEREOF, the said Powell Steel Company has caused its corporate name to be hereunto subscribed by its President and its duly attested corporate seal to be hereunto affixed by its Secretary, all in the City of Hartford, State of Connecticut, on the 12th day of January, 19—.

{CORPORATE SEAL}

POWELL STEEL COMPANY,
By ALEXANDER H. McDOWELL,
President

Attest seal:
FRANKLIN B. LORD,
Secretary

---

(2) IN WITNESS WHEREOF, the said corporation has hereunto affixed its corporate signature and seal, acting through its President and Secretary, duly authorized thereunto, all being done in the City, County, and State of New York, this 1st day of February, 19—.

HORLICK CARPET CORPORATION,
By HOWARD HORLICK,
President

{CORPORATE SEAL}

WILLIAM JOHNSON,
Secretary

Form 22. Testimonium Clause—Two Corporate Signatures

IN WITNESS WHEREOF, the said parties of the first and second parts have caused their respective corporate signatures and seals to be hereunto affixed by their duly authorized officers, in the City, County, and State of New York, on the day and year first above written.

{CORPORATE SEAL}

ARLINGTON BRASS WORKS,
By HENRY BRIERLY,
President

Attest seal:
JOHN H. SAVAGE,
Secretary

{CORPORATE SEAL}

NEWARK CASTINGS COMPANY,
By HORACE D. POWERS,
President

Attest seal:
HENRY M. SUNTHEIN,
Secretary

Form 23. Corporate Note—By President

$500.00

New York, April 5, 19—

Ninety days after date the Hillman Dredging Company promises to pay to the order of Howard P. Hunt the sum of Five Hundred Dollars.

Value Received.

Hillman Dredging Company,
By Nathaniel Potter,
President

Payable at
Irving National Bank,
New York

Form 24. Corporate Note—By Treasurer

$2,500.00

Boston, Mass., December 1, 19—

Four months after date the Hanover Securities Company promises to pay to the order of James C. Bennett the sum of Twenty-five Hundred Dollars, with interest from date until paid, at the rate of Six Per Cent per annum, at the Sedgwick National Bank of Boston.

Value Received.

Hanover Securities Company,
By William Curtiss,
Treasurer

No. 725
Due April 1, 19—

The preceding notes are in the simplest form. The corporate signature is affixed by one officer or by two as may be customary or required by by-law provision or directed by the board.

When a corporate acknowledgment is taken, the notary should not be an officer or stockholder of the corporation. The form of acknowledgment is usually regulated by statute and therefore varies in almost every state. The following form of corporate acknowledgment is that prescribed by the statutes of New York.

Form 25. Notarial Acknowledgment—New York

State of New York }
County of New York } *ss*:

On this 16th day of March in the year 19—, before me personally came John J. Kerry, to me known, who, being by me duly sworn, did depose and say that he resided in the City of New York; that he is the President of the Kerry Machine Works, the corporation described in and which executed the above instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

John J. Kerry

Sworn to before me the
day and year aforesaid.
(*Notarial signature and seal.*)

SECTION 4

CORPORATIONS

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 4

CORPORATIONS

CORPORATE RECORDS.—Certain records are peculiar to corporate organization. Some of these form part of the accounting records; others do not. In some states certain of these are specified by statute. The usual ones are:

Minute Book	Register of Transfers
Subscription Records	Stock Ledger
Instalment Receipts	Dividend Book
Instalment Book	Bond Register
Stocks Certificate Book	

Certain of these may be specified in the by-laws. It may be advisable to consult both the statutes and the by-laws to determine the requirements. In addition to prescribing certain books, the statutes may specify where and how they must be kept and what they must contain. Not all necessary records need be prescribed either by statutes or by-laws. The size of the corporation and the nature of its business must be taken into consideration in determining what books are necessary. It is essential that all transactions be accurately and systematically recorded. Small corporations sometimes employ a **combination record,** which is divided into parts, each taking the place of one of the separate records mentioned above.

Capital Stock

CAPITAL STOCK ENTRIES.—Opening entries on corporate books must be clear and complete. It is especially important that the journal entries be accompanied by all data which may be necessary at any time to throw light on the situation. The following classification of entries covers various conditions of stock issues:

1. Entries for original issues of stock sold under different conditions.
2. Entries relating to stock donated to the treasury.
3. Entries where an original issue of stock or treasury stock is given in direct payment of corporate obligations.
4. Entries relating to purchase and sale by corporation of its own stock (not an original issue). and of other stocks.

PAR-VALUE STOCK.—Preceding the formal entry of stock authorized or subscribed there should be brought in a short statement of facts relative to

organization. In case of a reorganization or the incorporation of a partnership this preliminary statement may be expanded into a concise history of preceding events of importance. The following is illustrative:

> The Acme Hardware Co., organized under the laws of the State of New York, begins business this day with an authorized capital stock of $300,000, consisting of 3,000 shares of a par value of $100 each, all of which were subscribed at par, as follows:
>
> | | | |
> |---|---|---|
> | S. O. Gordon | 1,000 | shares |
> | J. B. Mullen | 800 | " |
> | M. L. Smith | 600 | " |
> | T. J. Donovan | 600 | " |
>
> These subscriptions have all been paid in cash, except that of S. O. Gordon, who turned over merchandise valued at $20,000 and real estate valued at $50,000 and paid the balance, $30,000, in cash.

If a **formal journal entry** is desired to show the total authorized stock regardless of whether it is all subscribed and issued, the following is suitable:

Unissued Capital Stock	$300,000	
Capital Stock Authorized		$300,000

For authorization by charter of an issue of $300,000 of capital stock, consisting of 300 shares of a par value of $100 each.

The above entry has a better justification for its use when the total amount authorized is not at once issued. Assume that of the $300,000 authorized $200,000 is issued for cash, while the remaining $100,000 is held for future requirements. The first entry would be as above. The next entry would show the issue of $200,000 of stock for cash, thus:

Cash	$200,000	
Unissued Capital Stock		$200,000

For cash received by the company in full payment of following subscriptions:

P. S. Arthur	1000	shares
S. O. Miller	400	"
T. P. Moses	500	"
L. D. James	100	"

In case of the Acme Hardware Company illustration the formal entry would be followed by an entry showing receipt of cash, merchandise, and real estate, thus:

Cash	$230,000	
Merchandise	20,000	
Real Estate	50,000	
Unissued Capital Stock		$300,000

For cash, merchandise, and real estate received in full payment of capital stock issued.

When these entries are posted, proper ledger accounts must be set up. These are, in outline, as follows:

Capital Stock Authorized

Debit: For any reduction in the amount of authorized stock.	**Credit:** For amount of capital stock authorized by the charter.

Capital Stock Unissued

Debit: For amount of capital stock authorized by the charter.	**Credit:** For amount of capital stock issued.

When **preferred** and **common** stocks are issued, distinctive titles should be employed for each. Instead of the accounts, Capital Stock Authorized, and Capital Stock Unissued, there would be Preferred Capital Stock Authorized, Common Capital Stock Authorized, Preferred Capital Stock Unissued, and Common Capital Stock Unissued. The same principles apply as when but one class of stock is issued.

When no **Capital Stock Authorized account** is kept, the actual amount of stock issued is credited to a Capital Stock account at its par value. In this case the balance of Capital Stock account indicates par value of stock issued and outstanding. The original amount authorized does not appear, unless merely in the form of explanatory matter preceding or following the opening entry. Tendency is to use a Stock Authorized account, thus showing amount of authorized stock. Outstanding stock at any time is found by deducting stock unissued from stock authorized.

FUNCTION OF CAPITAL STOCK ACCOUNTS.—The capital stock accounts show par value of stock outstanding. They represent net worth in somewhat the same sense as do proprietor's and partners' accounts; but in case of stock having par value, profits and losses are not added to or deducted from capital stock accounts, as is sometimes done in case of no-par-value stock.

SUBSIDIARY STOCK RECORDS.—Certain books and records are necessary for adequate handling of capital stock, summarized in the controlling Capital Stock account, which is the equivalent of the difference between the balances of the Capital Stock Authorized account and the Capital Stock Unissued account, when the latter are kept.

The **stock ledger** or **book** is controlled by the Capital Stock account. It shows stock acquired, transferred, and number of shares held at any given time by each stockholder. Subscriptions to stock and payments thereon are shown preferably in a **subscription ledger.** The great majority of entries in the stock ledger consist of transfers of stock from one stockholder to another—a matter of no significance from the accounting point of view. The stock ledger affords legal evidence of stock ownership, showing stockholder's name and address, number of shares held by him, whether issued originally or subsequently transferred, and current balance to his credit. It shows numbers of certificates issued to each stockholder, number transferred, and date of the transaction. **Postings** to the stock ledger are made from the **stock certificate book;** but transfers may be posted from the **transfer book** or **transfer register.** Where both preferred and common stock exist a separate stock ledger should be kept for each class of stock. The stock ledger may be made **self-balancing** by

JOHN H. KIRCHER, 250 Washington St., Boston, Mass.

Date of Transfer	To Whom Shares are Transferred	Certificate Numbers		Number of Shares	Date of Transfer	From Whom Shares were Transferred	Amount Paid on Shares	Certificate Numbers	Number of Shares
		Surrendered	Reissued						
1921					1921				
Mar. 13	W. K. Howard	15	70	10	Jan. 10	Original Issue	Full-Paid	15	90
July 15	Robert Moyer	70	145	40	Mar. 25	George Holmes	"	85	75
July 31	Harold McKain	145	...	40	Aug. 1	Harvey Cornell	"	150	35
Dec. 3	James McNeil	85	175	20	Aug. 15	Howard Gaines	"	160	50
Dec. 16	James Archer	{175, 165}	231	105	Sept. 2	John Woodwell	"	165	100
Dec. 31	Balance	...	...	180	Oct. 5	Henry Simpson	"	42	45
				395					395
					1922				
					January 3	....	....	....	180

Form 1a. Capital Stock Ledger

opening a Capital Stock account on the front page, debiting it with aggregate amount of stock outstanding.

STOCK LEDGER FORM.—Main object of stock ledger is to show **number of shares** standing in a stockholder's name at any time. In **one form** of stock ledger, stockholder's account is debited for stock purchased and credited for stock sold. In the **other form,** stockholder's account is credited for stock purchased and debited for stock sold, as shown in Form 1a. Since the general Ledger Capital Stock account is credited for stock issues, better practice is to credit stockholders' accounts for their purchases of stock. Form 1b shows stock ledger form prescribed by New York Tax Commission.

Hill River Copper Company

Date	Serial No. of Canceled Certificate	No. of Shares	By Whom Surrendered	To Whom Issued	Serial No. of New Certificate	No. of Shares
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....

FORM 1b. Capital Stock Ledger (New York Form Prescribed by Tax Commission)

Both **stock ledger** and **certificate book** should be treated as parts of general system of accounts, to avoid difficulties in reconciling Capital Stock account and stock ledger. This is especially true where number of stockholders is large. Problem of reconciliation disappears when all authorized stock has been issued; but tests should be made each month to determine that no errors have been made in transferring stock from one account to another. This can be done by making a schedule of outstanding stock and seeing that its total agrees with the Capital Stock account.

In making **transfers of stock** care must be taken in case a stockholder desires to transfer part of his shares. His original certificate should be canceled and two new ones issued, one in favor of transferee for number of shares transferred and one in favor of transferor for number remaining in his ownership. Lack of attention to these details is the cause of much trouble. When a stockholder surrenders one certificate for two or more of smaller denomination it is a split. The surrender of two or more smaller certificates for one larger is also a **split.**

When transfers are made frequently, a **transfer register** or **journal** should be used as a posting medium to the stock ledger. Each transfer involves a charge to transferor and a credit to transferee. Where transfers are infrequent, postings may be made from the **transfer book** or even the **stock certificate book.**

ACCOUNTING FOR STOCK SUBSCRIPTIONS.—Stock certificates should not be issued to subscribers until they are paid in full. Until the subscribers pay in full their accounts are in the nature of accounts receivable. Procedure is illustrated as follows:

The Atwater-Lawson Company, incorporated under the laws of Massachusetts, with an authorized capital stock of $200,000, receives subscriptions to $150,000 of stock at time of organization. The entries to show stock authorized and subscriptions to $150,000 thereof are:

Unissued Capital Stock	$200,000	
Authorized Capital Stock		$200,000
Subscriptions	$150,000	
Capital Stock Subscribed		$150,000

For subscriptions, at par, to 1,500 shares, by the following incorporators:

A. J. Ramsdell	700 shares
L. L. Atkins	400 "
S. T. Jordan	200 "
J. R. Morton	200 "

Ramsdell and Atkins pay their subscriptions immediately in full cash, Jordan pays his by transferring merchandise valued at $20,000, but Morton pays nothing at present. The following entries are in order:

Cash	$110,000	
Subscriptions		$110,000

For payments of subscriptions, as follows:

A. J. Ramsdell	700 shares
L. L. Atkins	400 "

Merchandise	$ 20,000	
Subscriptions		$ 20,000

For transfer of merchandise by S. T. Jordan in full payment of his subscription.

Capital Stock Subscribed	$130,000	
Unissued Capital Stock		$130,000

For stock certificates Nos. 1, 2, and 3 issued to subscribers having paid their subscriptions in full.

The **Subscriptions** and **Capital Stock Subscribed** accounts are outlined below:

Subscriptions

Debit: For amount of subscriptions to capital stock.	**Credit:** For cash or property paid on subscriptions; or for amount of each instalment as it falls due; also for unpaid balances of subscriptions canceled.

Capital Stock Subscribed

Debit: For par of stock subscribed and credited to this account, when certificates of stocks are issued for shares paid up, credit being to Capital Stock Unissued. For par of canceled stock subscriptions, having been pre-credited to this account.	**Credit:** For par of capital stock subscribed, debit being to Subscriptions account.

Capital Stock Subscribed account is a suspense account in which subscriptions are entered until certificates are issued, which is ordinarily done when they are paid in full. It shows total original par value of all subscriptions certificates for which have not been issued.

To illustrate, A, B, and C are subscribers to stock of the X Company in amounts of $200, $700, and $1,200, respectively. A has paid in full, B has paid $500, and C nothing. C is to receive his stock for $1,000. Entry for subscription is:

Discount on Stock	$ 200	
Subscriptions	1,900	
Capital Stock Subscribed		$2,100
(*Full explanation.*)		
Cash	$ 700	
Subscriptions		$ 700

When A's stock is issued:

Capital Stock Subscribed	$ 200	
Capital Stock Unissued		$ 200
(*Full explanation.*)		

The Capital Stock Subscribed account now stands credited with $1,900, this being amount subscribed but not as yet fully paid. Sometimes stock subscribed on the instalment plan is credited directly to Capital Stock account; but the above method is ordinarily preferable.

Subscriptions Ledger.—Where subscriptions are numerous and are paid in instalments, a **subscriptions ledger** should be kept. This is controlled by the **Subscriptions account** in the general ledger. In it is kept an account with each subscriber. This account is debited with the amount of his subscription and credited with amounts paid thereon. A trial balance should be taken monthly to ascertain that the subscription ledger agrees with controlling account. For this ledger any form of small ledger sheet, bound book or card system, is suitable. For debits, show date, subscription number, number of shares subscribed, journal folio from which posted, and amount. For credits, show date, receipt number, cash book folio from which posted, and amount.

Subscription Cancellation.—Cancellations of subscriptions are sometimes permitted. If so, and no payment thereon has been made, entry is:

Capital Stock Subscribed	$2,000	
Subscriptions		$2,000
To cancel subscription No. 78, of C. J. Astor, for 20 shares.		

If money has been received and it is decided to return it to subscriber, following entries are made in journal and cash book, respectively:

Capital Stock Subscribed	$1,500	
Subscriptions		$1,500
To cancel unpaid balance of subscription No. 78, of C. J. Astor, for 20 shares.		
Capital Stock Subscribed	$ 500	
Cash		$ 500
To refund payment by C. J. Davis, on subscription No. 78, for 20 shares.		

If the company retains, say, 20% of amount paid in, entry is:

Capital Stock Subscribed	$500	
Cash		$400
Profit on Forfeited Subscriptions		100
To refund 80% of payment by C. J. Davis, on subscription No. 78, for 20 shares.		

Stock Sales After Organization.—Entry is same as if made at time of incorporation.

Transfers of Subscriptions.—These are sometimes permitted, whether or not fully paid. If numerous, provide a **subscriptions transfer journal** similar to stock transfer journal. Amount of unpaid balance is credited to transferor on subscription ledger and debited to transferee.

Other Books Used.—In case of large companies a **subscriptions journal** should be used. It shows date, subscription number, name and address of subscriber, number and kind of shares of stock subscribed, amount to be paid thereon, name of salesman, if any, and his commission. Each month following entry is made in journal for the total month's subscription:

Subscriptions	$...	
Capital Stock Subscribed		$...

Amounts receivable on subscriptions are posted to the **subscriptions ledger,** an account being opened for each subscriber. This ledger must agree with the controlling Subscriptions account in the general ledger.

Payments on subscriptions are entered in cash book in a **receipts from subscriptions column,** from which total is posted monthly to general ledger, whereas details are posted to the subscriptions ledger.

When a **certificate** representing stock previously unissued is issued, **number of shares** and **certificate number** are posted from certificate stub to stock ledger. At end of month total number of shares thus issued is represented in following journal entry:

Capital Stock Subscribed	$...	
Capital Stock Unissued		$...

Transfers from owner to owner do not require a general journal entry, but only in the **transfer register,** whence they are posted to the stock ledger accounts of transferor and transferee.

Stock subscription transfers are entered in **subscriptions transfer journal** or in **unissued** column of **transfer register** the same as transfers of certificates. Name of subscriber to whom transferred, subscriptions number, and number of shares should be recorded. These transfers are posted to the **subscriptions ledger.**

Stock subscription cancellations, no payment having been made, are indicated by a **red ink entry** on subscriptions journal giving same information as at time subscription was entered. It indicates a deduction and is posted to credit of subscriptions ledger.

An instalment book is employed when stock is to be paid on instalment plan. (See Form 2.) A new page is made out for each instalment. Instead of rewriting the names each time, short pages may be used after the first. Consider the instalment book a **subsidiary ledger** to the **Instalment account.** Number in first column indicates folio of subscriptions ledger in which subscriber's account is recorded. Figure in last column preceding "remarks" column indicates cash book folio to which payments should be carried each day in total, being credited to Instalment account. An Instalment account should be opened in general ledger and charged to aggregate amount of subscriptions

Lancaster Cement Company

Instalment No. 1—10%—Payable June 2, 1922

Shdrs' L. F.	Subscriber's Name	Address	Number of Shares	Amount of Instalment	When Paid	Amount Received	C. B. Fol.	Remarks
25	Ronald Logan	627 Warren Ave., Lancaster, Pa.	1,000	$10,000	June 2	$10,000	......	....
7	Samuel Bennett	4425 Spruce St., Philadelphia, Pa.	1,000	10,000	June 2	10,000	......	....
40	A. W. Thompson	Lancaster, Pa.	1,000	10,000	June 2	5,000	......	Balance in 4 days
12	J. H. Connor	Harrisburg, Pa.	1,000	10,000	....	....	......	Will pay on the 6th
16	O. K. Ferguson	1420 Arch St., Philadelphia, Pa.	1,000	10,000	June 2	10,000	......	....

FORM 2. Instalment Book for Stock Subscriptions

due at that date. It is desirable to carry each day's total receipts to the cash book instead of waiting until all are paid, because it is unlikely that all instalments will be paid as they fall due. Data for compilation of the instalment book is secured from the subscriptions ledger. The instalment book may be bound or loose-leaf, the latter ordinarily being preferable. When subscribers are few in number, the instalment book may be dispensed with, in which case cash received on instalments is entered directly in cash book and posted therefrom to subscribers' accounts in subscriptions ledger. Totals are carried to general Subscriptions controlling account.

An **outline** of the general ledger **Instalment account** is as follows:

Instalment Account

Debit: For instalment due, corresponding credit being to Subscriptions account.	**Credit:** For amounts paid on instalments due.

The Instalment account is opened each time an instalment falls due, and closed when all payments have been made thereon. It should be used only when the amount of stock subscribed is considerable. Each time it is opened, the number and per cent of total subscription represented should be indicated, as, "Instalment No. 1, 20%." To ascertain total due on subscriptions, balance of Instalment account, if any, should be added to balance of the Subscriptions account. When Subscriptions controlling account is credited to offset charge made to Instalment account, individual subscribers' accounts in subscription ledger must also be credited. When subscribers pay, credit Instalment account for total and in detail in the Instalment book.

To illustrate, Johnson Manufacturing Co. is organized Mar. 1, 19—, capital stock $500,000, subscribed thus:

Dugald Stewart	500 shares
T. D. Hanover	500 "
L. K. Smith	500 "
J. D. Orton	500 "

Terms are 40% down and balance in two equal instalments. The entries are:

Mar. 1, 19—

(1) Capital Stock Unissued	$500,000	
Capital Stock Authorized		$500,000
(2) Subscriptions	$500,000	
Capital Stock Subscribed		$500,000
The Johnson Manufacturing Co. is organized this date with an authorized capital stock of $500,000, there being 5,000 shares of a par value of $100 each, the total of which is subscribed as per following list. Terms are 40% down and balance in two equal instalments due, respectively, Apr. 1 and May 1, 19—.		
(3) Instalment No. 1	$200,000	
Subscriptions		$200,000
For first instalment (40%) due on date of incorporation.		

(4) Cash	$200,000	
Instalment No. 1		$200,000
For payment of first instalment of 40%.		
Apr. 1, 19—		
(5) Instalment No. 2	$150,000	
Subscriptions		$150,000
For second instalment (30%) due on Apr. 1, 19—.		
(6) Cash	$150,000	
Instalment No. 2		$150,000
For payment of second instalment (30%) due Apr. 1, 19—.		
May 1, 19—.		
(7) Instalment No. 3	$150,000	
Subscriptions		$150,000
For third instalment (30%) due on May 1, 19—.		
(8) Cash	$150,000	
Instalment No. 3		$150,000
For payment of third instalment (30%) due May 1, 19—.		

STOCK SOLD BELOW PAR.—Original issues are sometimes sold below par, the laws of some states specifically permitting this. Unless some such statutory provision exists and is followed, so long as the stock stays in hands of purchasers or of those who purchase it in turn with a knowledge of facts, the liability for the unpaid part attaches. Discount is not the same as a commission, however; the latter being a legitimate deduction, no liability accrues.

Illustration.—The James Hardware Co. is organized under laws of State of Maryland, July 22, 19—, authorized capital stock, $200,000. At date of organization stock having a par value of $50,000 is sold to Martin Lawrence at a discount of 20%. The entry is:

(1) Cash	$40,000	
Discount on Capital Stock	10,000	
Capital Stock Subscribed		$50,000
(2) Capital Stock Subscribed	$50,000	
Unissued Capital Stock		$50,000

The outline of the discount on Capital Stock account is:

Discount on Capital Stock

Debit	Credit
Debit: For amount of discount on capital stock sold below par.	**Credit:** For amount amortized, against surplus or otherwise.

Discount on capital stock should be regarded as either a capital loss or as a developmental cost. If a loss, it should be charged to Surplus. If a developmental cost, it should be capitalized by charging to some fixed asset account, such as **Cost of Development.**

STOCK SOLD ABOVE PAR.—When stock is sold at a premium, credit proceeds in excess of par to a **Premium** account or to **Capital Surplus.** If held in a Premium account this should be regarded as a classification of surplus.

Where there are both discounts and premiums resulting from sales of stock, the net balance of the two accounts should ultimately find its way to Surplus.

Illustration.—The Lewiston Manufacturing Co. sells stock with a par value of $100,000 at a premium of 20%, for cash. The entry is:

Cash	$120,000	
Unissued Capital Stock		$100,000
Premium on Capital Stock		20,000
For stock sold to provide for extensions and betterments.		

NO-PAR STOCK.—No-par stock should be entered on books at sale price, and should not be given a nominal value. If authorities insist on employing a nominal value, excess or deficiency of sale price above or below this nominal value should be carried to a Capital Surplus or Deficit account, as the case may be. In general the principles governing book entries for no-par stock are the same as those for par value stock. In accounting for no-par stock there is no need of Capital Stock Authorized and Capital Stock Unissued accounts.

Opening Entries for No-Par Stock.—A pro forma statement is necessary, since it is impossible to indicate authorized capital stock by means of a journal entry. The opening journal entry should show the subscriptions first received.

Illustration.—The Atkins Wholesale Co. was incorporated Apr. 1, 19—, with an authorized capital of 200,000 shares without par value. At time of incorporation 100,000 shares were subscribed at $30 per share, one-half payable immediately in cash and balance July 1. Entries are as follows:

Apr. 1, 19—		
Subscriptions	$3,000,000	
Capital Stock Subscribed		$3,000,000
The Atkins Wholesale Co. is this day organized with an authorized capital stock of 200,000 shares, no-par value stock. Subscriptions are received for 100,000 shares at $30 per share, one-half payable this day and one-half July 1.		
Cash	$1,500,000	
Subscriptions		$1,500,000
(*Full explanation.*)		
July 1, 19—		
Cash	$1,500,000	
Subscriptions		$1,500,000
(*Full explanation.*)		
Capital Stock Subscribed	$3,000,000	
Capital Stock		$3,000,000
For certificates Nos. .... issued to .... for subscription paid in full.		

No-Par Stock Records.—Same records are used as in case of par-value stock. Corporations having no-par stock are not able to tell number of shares outstanding by subtracting debit balance of **Unissued Capital Stock account** from credit balance of **Capital Stock Authorized Account,** and dividing difference by par value of stock. To determine how many shares Capital Stock account represents, it is necessary to trace back individual transactions, unless details thereof are shown in ledger account in addition to money value. This may be done as per following illustration:

Capital Stock

	19— July 1, 100,000 shares at $30.... $3,000,000.

Surplus.—In case of corporations having no-par stock net profits should be carried to Surplus as is done when there is par-value stock, and earned surplus should be distinguished from capital surplus. The need of differentiating between capital stock and surplus in case no-par stock is employed is an accepted principle.

Book Value = (Capital + Surplus) ÷ Number of Shares Outstanding

No-Par Preferred Stock.—No-par preferred is given a **declared value** more frequently than is no-par common, because if it is given a preference as to assets, amount applicable to each share must be indicated. It need not be carried in books at this value.

Par preferred and no-par common sometimes exists in combination in same corporation. In this case the usual rules apply to each regardless of existence of other kind of stock.

To illustrate, The Arlington-Smith Co. is incorporated with a capital of 20,000 shares no-par common stock and 15,000 shares preferred, having a par value of $100 each. Of these, 10,000 shares of common are sold for $40 each, and 5,000 shares of preferred at par. The additional 10,000 shares of common are issued in payment for real estate valued at $339,500. The entries are:

Cash..	$400,000	
Common Stock.........................		$400,000
For payment in full of 10,000 shares of common stock, this being one-half of total amount of common stock authorized.		
Cash..	$500,000	
Preferred Stock.........................		$500,000
For payment in full in cash of 5,000 shares of preferred stock.		
Real Estate....................................	$339,500	
Common Stock.........................		$339,500
For purchase of real estate, in payment for which 10,000 shares of no-par common stock are issued.		

Change from Par to No-Par Stock.—This may be illustrated as follows: Company A has outstanding common stock amounting to $500,000, par value per share $100. It also has a surplus of $200,000, $50,000 of which is capital surplus resulting from sale of stock at a premium. Charter is changed to authorize an issue of 10,000 shares of no-par stock. Of these, 5,000 shares are to be issued pro rata to present stockholders. Entry, first plan:

Capital Stock..................................	$500,000	
Surplus..	50,000	
Capital Stock.........................		$550,000
For exchange of par stock for no-par stock on a pro rata basis, as per amended charter. (See minute book, p. ....) Surplus derived from sale of stock is canceled, credit being to new		

Capital Stock account. Old Capital Stock account is closed, credit being likewise to new Capital Stock account

If the theory that the surplus derived from sale of original stock at a premium does not enter into valuation of stock is adhered to, the entry is:

Capital Stock..................................	$500,000	
Capital Stock..........................		$500,000
To record cancellation of old Capital Stock account and issue of new no-par Stock; as per amended charter. (See minute book, p. ....)		

If the theory is followed that book value of old stock should be basis for valuation of no-par stock, following is the necessary entry:

Capital Stock..................................	$500,000	
Surplus..	200,000	
Capital Stock..........................		$700,000
(Full explanation.)		

No-Par Treasury Stock.—If no-par stock is repurchased above original sale price, excess represents a reduction of surplus, and should be charged to Surplus. If repurchased at less than original sale price, difference may be credited to **Contingent Profit on Treasury Stock,** or be regarded as paid-in surplus, charge to Treasury Stock account being at original sale price. Where stock was originally sold at various prices some prefer to charge Treasury Stock at an average of these various prices. Later sales of stock might make this average somewhat meaningless. In case of **donated no-par stock,** best practice is to make a memorandum entry, thus:

Donated Stock..................................	$.......	
Capital Stock..........................		$.......
For donation of 500 shares for working capital.		

When donated stock is sold, charge Cash and credit Donated Surplus. If intangibles are received in payment for original issue, conservative practice is to credit proceeds of sale of donated stock to asset account representing intangibles.

No-Par Stock Legislation.—In New York a committee of the State Bar Association, in 1892, suggested no-par stock. In 1907, the Bar Association committee devised a bill which was passed by the New York legislature the same year. This was vetoed. Same bill, changed somewhat, was again passed Apr. 15, 1912, since when it has been in effect. Following states have passed no-par stock legislation:

1916 Maryland
1917 California, Delaware, and Maine
1918 Virginia
1919 Illinois, Pennsylvania, New Hampshire, Ohio, Wisconsin, and Alabama
1920 Massachusetts, New Jersey, Rhode Island, and West Virginia
1921 Colorado, Idaho, Kansas, Michigan, Missouri, North Carolina, and Utah
1922 Georgia and Arizona
1923 Washington

Following are among the corporations which have adopted no-par stock: Kennecott Copper, Columbia Graphophone, Consolidated Textile, Cuba

Cane Sugar, General Motors Corp., Otis Elevator, Loew's, Inc., Radio Corp. of America, Sinclair Consolidated Oil Corp., United States Stores, Vanadium Corp., and Wilson & Co., Inc.

Thomas Conyngton gives **characteristics of laws** authorizing no-par stock as follows:[1]

1. Authorization may be secured upon organization by charter provision, or by amendment of existing charter. Latter method facilitates reorganization.
2. The privilege is generally limited to what are termed in New York **business corporations,** i.e., those organized for mining, manufacturing, and mercantile ventures.
3. The statutes provide that in all cases such shares shall be equal in all respects.
4. These **equal rights and privileges** are: each share entitles holder to one vote for each share held; to notice of corporate meetings; to inspection of corporate books; to participate proportionately in dividends after preferred dividends are paid; and to share proportionately in surplus after debts are paid and after preferred stockholders have been paid their principal and accumulated dividends.
5. **Certificates of shares** with no par value must give number of shares to which holder is entitled and should give whole number of shares authorized to be issued. As shares have no par value, holder should be informed as to his proportionate holding. In New York this information must be given but it is not compulsory in other states.
6. All states prescribe a method of fixing a **selling price,** but there is a diversity of methods. May be prescribed in charter. This is objectionable, because an advantage of stock without par value is that corporation may sell it at any price. Any change in price would require an amendment of the charter.

SUNDRY CONSIDERATIONS.— Frequently capital stock is issued in payment for **organization expenses.** This may be gradually written off or permanently capitalized. The former plan is ordinarily the better one. For this purpose five years is often regarded as a suitable period, one-fifth being charged off each year.

Commissions to bankers and syndicates who market the capital stock of a corporation are sometimes paid in capital stock. If paid by an original issue of stock the charge should be to **Commission** or to **Organization Expense,** and the credit to **Capital Stock** or **Unissued Capital Stock,** according to method adopted to handle capital stock. Sometimes commissions are paid in **treasury stock** or in **donated stock,** in which case the one or other of these accounts is credited.

Sometimes **salaries** are paid in capital stock. The stock is ordinarily issued only once a year in payment, although the accruing liability should be shown monthly by a charge to Salaries and a credit to Salaries Accrued, to a Subscriptions to Stock account, or to the individual. When stock is issued, charge Salaries Accrued, Capital Stock Subscribed, or the individual, and credit Capital Stock, Unissued Capital Stock, or Treasury Stock, according to the particular method followed.

Any debt may be paid in capital stock, so long as rules governing issuance of stock are observed. When paid in no-par stock, amount to be credited to Capital Stock account is amount of debt canceled.

The term **treasury stock** applies only to stock of issuing corporation donated back or repurchased. Stocks of other corporations purchased constitute **investments** and should be carried at cost; unless buying and selling stocks is the business of company, in which case cost or market, whichever is lower, may be used as basis. If purchased to secure control, considerations applicable to **holding companies** apply.

To illustrate, The Alexander-Johnston Co. buys $100,000 par value of stock of the Smithson-Jones Co. at $80 per share. Later it disposes of $50,000 par value of this stock at $90 per share. Entries are:

[1] *Administration*, Jan. 1921, pp. 91–92.

Stock of Other Companies	$80,000	
Cash		$80,000
For purchase of $100,000 par value of the stock of Smithson-Jones Co. at 80.		
Cash	$45,000	
Stocks of Other Companies		$45,000
For sale of $50,000 par value of stock of the Smithson-Jones Co. at 90.		

If laws permit, purchase of stock of other companies may be made by issuing stock of purchasing company in payment.

Bonuses may be paid in stock, either unissued or treasury. They are sometimes given to employees as an additional compensation, and are sometimes given in connection with bond sales or sales of a different class of stock. Charge **Bonus** and credit **Donated Stock** or **Capital Stock.** Disposition of the charge to Bonus accounts will depend on the nature of the transaction.

Dividends

NATURE AND PAYMENT OF DIVIDENDS.—Ordinarily dividends are declared from **net profits** of a corporation. Once legally and publicly declared, they cannot be rescinded, but become the direct liability of the company. As soon as declared, an entry should be made on the books expressing this liability. **Cumulative dividends** do not become such an obligation until declared. The **Dividends Payable account** is used to express this liability, **Surplus** being charged.

The Oliver Mining Company
Capital Outstanding $400,000

Dividend No. 24 Sheet No. 48

List of stockholders of this company as shown by the transfer books at the closing thereof at six o'clock p.m., Feb. 15, 19—, and to whom the dividend of Ten Per Cent, declared Feb. 12, 19—, is payable on Mar. 1, 19—.

Shares outstanding 40,000 Rate of dividend 10%

Name of Stockholder	To Whose Order Check Should be Drawn if Different from that of Stockholder	Mailing Address	Number of Shares	Amount of Dividend Paid	No. of Check Issued in Payment
....	....	....	....	....	....
....	....	....	....	....	....
....	....	....	....	....	....

Form 3. Dividend Book—Payment by Mail

If the stockholders are few in number, **dividend checks** may be drawn against the general bank account. At time of payment, Dividends Payable account is charged and Cash credited. The larger corporations, after determining the amount of a dividend, draw one check for the total, deposit this in a special

Hillsport Manufacturing Company
Semiannual Dividend No. 24..........19.. 4%

Name of Stockholder	Address	Number of Shares	Amount of Dividend	We Hereby Acknowledge Receipt of the Accompanying Dividend
....	....	....	....	....
....	....	....	....	....
....	....	....	....	....

FORM 4. Dividend Book—Personal Payment

bank account, and then draw the **individual dividend checks** against this account. Balance in this account at any time indicates total amount of outstanding dividend checks. **Specially printed dividend checks** may be used. These give date and number of dividend. An **addressing machine** is used to stamp name and address of stockholder in lower left-hand corner, and amount is filled by means of a typewriter or printing machine. After being signed by proper official, they are mailed in **window envelopes.**

The **dividend book** (Form 3) is used to show names of stockholders, dividend date, amount of checks, etc. The list is made up from the stock ledger for each dividend declared. To accomplish this it is frequently customary to close the **transfer books.** Loose-leaf dividend books are customary in case of large corporations. Where stock is closely held and stockholders call at company's office for their dividend checks, Form 4 may be used.

Illustration.—The Hanover Corp. has net profits of $3,127,528.13 for the year ended Dec. 31, 19—. On Jan. 22 the directors declared a cash dividend No. 13, of 5%, on the $20,000,000 outstanding stock, payable quarterly, Mar. 1, June 1, Sept. 1, and Dec. 1. Entries are:

Dec. 31, 19—		
Profit and Loss..................	$3,127,528.13	
Surplus......................		$3,127,528.13
To carry net profits for year ended Dec. 31, 19—, to Surplus.		
Jan. 22, 19—		
Surplus............................	$1,000,000.00	
Dividend Payable No. 13........		$1,000,000.00
To show liability for dividend of 5% on outstanding stock, declared today by the Board of Directors and payable quarterly, Mar. 1, June 1, Sept. 1, Dec. 1, 19—.		
Mar. 1, 19—		
Dividend Payable No. 13..............	$ 250,000.00	
Cash.........................		$ 250,000.00
For first quarterly payment of dividend No. 13.		

Entries for June 1, Sept. 1, and Dec. 1, are similar to the last entry above.

Dividends on no-par stock are expressed as amounts of money per share, not as a per cent per share. Otherwise procedure is same as in case of par-value stock.

SPECIAL FORMS OF DIVIDENDS.—A **scrip dividend** is one paid by promissory note owing to temporary shortage of cash. It usually bears interest and is given a definite due date. The scrip is a **certificate** which contains company's promise to pay and all details necessary to make it a proper form of contract. They are frequently transferable, and may be convertible into the company's stock. When the dividend is paid, **Scrip** instead of **Cash** is credited. Later when the scrip is paid, **Cash** is credited and **Scrip** and **Interest** are charged.

Special (including **interim**) **dividends** are sometimes declared additional to the regular dividend. They are ordinarily declared only when justified by extraordinary profits.

Dividends may be set off against stock subscriptions, providing the debt is due when the dividend is payable. This is accomplished by charging **Dividend Payable account** and crediting **Instalment account,** instead of **Cash.**

Cumulative dividends passed require no formal entry because they do not become debts until declared. The contingent liability therefore should be shown in a footnote to the balance sheet.

Stock dividends are dividends payable in the company's own stock. Unissued, purchased, treasury, or donated stock may be used for this purpose, but sufficient surplus must exist from which to make the distribution. The entry is the same as for a cash dividend except that **Capital Stock** is credited instead of cash when the dividend is paid. If the dividend is paid in **no-par stock,** the amount of surplus is not affected, unless each share is given an arbitrary valuation. The stockholders' interest is merely split up into more shares. Entries for stock dividends paid in par value stock are:

Surplus..	$.....	
Dividend No. 6....................................		$.....
To show liability for dividend of 15% on outstanding stock, declared this day by the Board of Directors.		
Dividend No. 6..	$.....	
Capital Stock..		$.....
To show issue of stock in payment of dividend No. 6.		

Dividends are sometimes paid in assets other than cash, as property or bonds of other companies, providing sufficient profits exist. In this case the charge is to Surplus and the credit to the property account in question.

Accounting for Bond Issue

DEFINITIONS.—A **bond** is a written promise, under seal, to pay a sum of money at a specified time. Bonds are **registered** and **coupon,** but coupon bonds may be registered as to principal. In case of bonds registered as to interest the interest is paid by check. In case of coupon bonds the interest is secured by cutting off the coupons as they fall due and cashing them. All bonds of a given issue usually bear the same date. If one or more coupons mature before a bond is sold, these are clipped off and pasted in the **coupon register.** Of an **authorized issue** the total or less may be outstanding at any time. Thus of an authorized issue of $15,000,000 Union Bag & Paper Corp. First Mortgage Gold 6's, dated May 1, 1922, there were outstanding $6,500,000 in Oct., 1922. To the amount authorized but not issued the term **treasury bonds** is sometimes applied, but some accountants apply this term only to

E 455

METROPOLITAN INVESTMENT CO.

BOND REGISTER

$1,000.00 6% TRUST BOND

Dated Jan. 1, 1922 Due Jan. 1, 1932 First Coupon due July 1, 1922

20	15	10	5
19	14	9	4
18	13	8	3
17	12	7	2
16	11	6	Canceled Coupon

FORM 5. Coupon Register

BOND NO. E 455	AMOUNT $1000.00/100 NAME Hayden, John R.	CLASS Reg. Deb. 6% 1926

BONDHOLDER'S ADDRESS	TRANSFERRED TO
Post Office New York City	Name
County State New York	Address
Street and No. 269 West End ave.	
Transferred From William Scott	

FORM 6. Index of Bondholders

bonds which have been outstanding and have come again into possession of the company.

Nominally issued bonds are those which have been certified by trustees and placed with proper officer for sale and delivery; or pledged, or placed in some special fund of the accounting company.

Actually issued bonds are those sold to a bona fide purchaser.

ACCOUNTING RECORDS.—Method of disposal of bonds determines what records are essential. If corporation sells bonds direct, treasurer must keep a full record. If sold through a syndicate or trust company, much detail of recording, transfers, etc., is taken care of by the syndicate or trust company.

A coupon register is necessary if coupon bonds are issued (Form 5). **An index of bondholders** should be kept in card index form (Form 6).

The **bond register** (Forms 7a, 7b) provides space for name and address of holder, number of his bond, date acquired, name of transferee, and columns for interest payments. In case of a 10-year bond, interest payable semiannually, 20 columns are necessary. When a **registered bond** is transferred, old bond is canceled and a new one is issued in its place. Surrendered bond is canceled and filed. In **bond register** a **red-ink line** is ruled through **name and address** of former owner, also through **number and amount** of canceled bond. Number of new bond is written directly after last entry of interest payment on old bond. A line should be ruled through remaining interest columns. Next, name and address of new holder is recorded on first vacant line of register in "to whom issued" column. Bonds should be entered in **numerical order** to make location of any specified bond easy. Number of page of bond register on which a given bond is registered should be entered on index of bondholders. Difference between footings of amount column of bond register and total bonds canceled should agree with general ledger **Bond account balance.** When interest on bonds is paid by check, Interest is charged and Accrued Interest credited monthly in general ledger. When interest is paid, Cash is credited and Accrued Interest charged. In case of registered coupon bonds, interest columns are omitted from the register, and bonds are entered as presented, not numerically, as are registered bonds. One page of **coupon register** should be used for each bond, spaces being numbered to correspond with coupon numbers.

BOND ACCOUNTS.—If a formal entry is desired to show total authorized bond issue, credit **Bonds Authorized** and charge **Unissued Bonds** for par value of the bonds authorized. If in series, open separate accounts for each series. Each issue should be given a distinguishing title, as, "Ten-Year Gold 8's," "Convertible Debenture Gold 6's," "Fifteen-Year 7% Equipment Trust Certificates," etc. If undesirable to show bonds authorized in a formal account, a **Bond** account should be credited with par of bonds actually issued. Failure to indicate in some way amount authorized is a failure to indicate the true amount for which property subject to the bond mortgage may be mortgaged in case of future sales of bonds.

Bond Premium and **Bond Discount** accounts are employed, respectively, when bonds are sold above or below par.

To illustrate, A $100,000 issue of 20-year first mortgage 6% bonds is sold at a premium of 10. The entry is:

Cash	$110,000	
First Mortgage 6% Bonds		$100,000
Premium on Bonds		10,000
For sale of $100,000 20-year first mortgage 6% bonds at a premium of 10.		

CLASS *Registered 1st Mortgage 1930*

	NO.	DATE OF BOND		TO WHOM ISSUED		TRANSFERRED		AMOUNT
				NAME	ADDRESS	NAME	ADDRESS	
1	4000	1920 July	1	James Morse	468 West 87th St. New York City			$1,000.00
2	~~4001~~		~~1~~	~~J.B. Jackson~~	~~Brookline, Mass.~~	Wm. R. Gilbert	Brookline, Mass.	~~1,000.00~~
3	4002	Oct.	15	Henry R. Dale	Garrison, N.Y.			500.00
4	4003	1921 Feb.	12	L.D. Hurst	500 Boyston St. Boston, Mass			250.00
5	4004	Mch.	20	Ralph R. Gray	374 Park Ave. New York City			1,000.00
6	4167	1922 Jan.	1	Wm. R. Gilbert	Brookline, Mass.			1,000.00
7								
8								
9								
10								
32								
33								
34								

FORM 7a. Bond Register (left-hand page)

INTEREST PAYABLE *January 1st & July 1st*

INTEREST DATE		1921 JAN.	1921 JULY	1922 JAN.	1922 JULY	1923 JAN.	1923 JULY	1924 JAN.	1924 JULY	1929 JAN.	1929 JULY	1930 JAN.	1930 JULY	REMARKS	
1920 July	*1*	*30 —*	*30 —*	*30 —*	*30 —*										1
"	*1*	*30 —*	*30 —*	*30 —*	*(See No. 4167)*										2
Nov.	*1*	*5 —*	*15 —*	*15 —*	*15 —*									*Rec'd Int. 7/1/20 to 11/1/20 $10.00*	3
1921 Mch.	*1*		*5 —*	*7 50*	*7 50*									*1/1/21 to 3/1/21 $2.50*	4
"	*1*		*20 —*	*30 —*	*30 —*									*1/1/21 to 3/1/21 $10.00*	5
1922 Jan.	*1*				*30 —*									*Trans. from #4001*	6
															7
															8
															9
															10
															32
															33
															34

FORM 7b. Bond Register (right-hand page)

A $100,000 issue of 20-year first mortgage 6% bonds is sold at a discount of 10. The entry is:

Cash	$ 90,000	
Discount on Bonds	10,000	
First Mortgage 6% Bonds		$100,000
For sale of $100,000 20-year first mortgage 6% bonds at a discount of 10.		

See section on "Mathematics" for principles governing accumulation of bond discount and amortization of bond premium.

Interest on Bonds account should be charged each month or fiscal period with interest on bonds applicable to the month or fiscal period, **Accrued Interest on Bonds account** being credited. When interest is paid, **Cash** is credited and **Accrued Interest on Bonds** is charged.

Bonds bear interest from **date of issue.** If sold at a subsequent date, interest accumulated but not due must be accounted for. This the purchaser buys by adding it to the purchase price of the bonds.

To illustrate, $500,000 of 5% bonds are sold at par one month after date of issue. Entry is:

Cash	$502,083.33	
Bonds		$500,000.00
Interest on Bonds		2,083.33
For sale of $500,000 of bonds with interest accrued for month at 5%.		

The purchaser loses interest on interest thus bought for period between date of purchase and next interest due date, in above illustration 5 months.

Bond subscriptions may be paid for in **instalments.** In this case **Bond Subscriptions** should be charged and **Unissued Bonds** credited at time of subscription. As instalments are paid, **Bond Subscriptions** is credited and **instalment receipts** issued. When all instalments are paid the receipts are exchanged for the bonds. **Deferred instalments** may be made to bear interest at rate paid on bonds. This, when received, is a credit to **Bond Interest.**

When bonds are sold through **bankers,** the bankers are charged with total issue and credited as payments are made by them.

To illustrate, James & Allison, investment bankers, guarantee purchase of an issue of $500,000 first mortgage bonds at 98. Entry at time contract is signed is:

James & Allison, Bankers	$490,000	
Discount on Bonds	10,000	
First Mortgage Bonds		$500,000

When a payment of $300,000 is received:

Cash	$300,000	
James & Allison, Bankers		$300,000

Bonds **guaranteed** as to interest constitute a contingent liability on books of guaranteeing company. If guaranteeing company is compelled to pay this interest through default of principal debtor, defaulting company is charged therefor on books of guaranteeing company, and on books of defaulting company guaranteeing company is credited.

Collateral trust bonds are secured by a deposit of stocks or bonds, or both, of other corporations. The North American Edison Co. Secured Sinking

Fund Gold 6's, Series "A," dated Mar. 15, 1922, and due Mar. 15, 1952, are secured by a pledge of 72.7% of outstanding common stock of the Cleveland Electric Illuminating Co. and the entire outstanding common stock of the Union Electric Light & Power Co. of St. Louis. Collateral must be turned over to trustee before bonds are sold. At time of transfer charge **Pledged Investments** and credit **Investments** or other equivalent accounts, giving full explanatory details. If more than one collateral issue is outstanding, separate accounts should be kept for pledged collateral applicable to each.

Equipment trust bonds are usually redeemable in series, one each year. Such bonds are secured by equipment upon which lessee usually makes an initial payment. As each series is paid, an entry is made on books of lessee charging Equity in Leased Equipment and crediting Leased Equipment.

To illustrate, Spring Valley Railroad Co. issues equipment trust 5% bonds, dated June 1, 1922, for $5,000,000 payable in 10 yearly instalments of $500,000, beginning June 1, 1923. Security consists of new equipment costing $7,000,000, upon which an initial payment of $2,000,000 is made by the railroad company. Equipment is purchased through agency of Carlton & Hayes, bankers, who also market the bonds, guaranteeing a return of 100 to the company. Expenses of issue amount to $10,000. Entries are:

June 1, 1922		
Equity in Leased Equipment................	$2,000,000	
Cash.............................		$2,000,000
Initial payment on following equipment. *(Give list and details.)*		
Leased Equipment.........................	$5,000,000	
Equipment Trust Bonds..............		$5,000,000
For issue of equipment trust bonds maturing $500,000 each year.		
Expense—Equipment Trust Bond Issue.......	$ 10,000	
Cash.............................		$ 10,000
June 1, 1923		
Equipment Trust Bonds....................	$ 500,000	
Cash.............................		$ 500,000
Equity in Leased Equipment................	$ 500,000	
Leased Equipment..................		$ 500,000

INTEREST ON BONDS.—Ordinarily bond interest is payable from date of issue of bonds. If bonds are registered as to interest, interest is paid by check; otherwise by cashing of coupons. Coupons are ordinarily payable at office of issuing company or its fiscal agent. If a sum is turned over to the company's fiscal agent to enable it to cash coupons as they fall due, an entry is made in the cash book crediting **Cash** and charging **Interest on Bonds.** The money should be sent to the trust company acting as fiscal agent soon enough to enable it to have money in readiness for cashing coupons on due date. The paid and canceled coupons should be returned to issuing corporation to be entered in the **coupon register.**

Accruing bond interest must be taken into consideration at the end of each accounting period. This is accomplished by means of a journal entry charging **Interest** and crediting **Interest Accrued** for the amount applicable to the period When actual payment of interest is made, **Interest Accrued** is charged and **Cash** is credited. It must be remembered that the interest paid is the **nominal**

rate, which may not be the **effective interest cost.** This can be determined only by making proper calculations for effect of discount or premium. (See section on "Mathematics.") Thus if bonds were marketed at a discount and if amount of this to be amortized in one month is, say, \$41.60, whereas interest accrued at nominal rate is \$416.70, then entry is:

Interest	\$458.30	
Interest Accrued		\$416.70
Discount on Bonds		41.60
To charge Interest with interest cost for month, set up liability for interest accrued, and amortize due amount of Discount on Bonds account.		

If above entry is made for each of 6 months constituting an interest period, entry to show payment when interest falls due is:

Interest Accrued	\$2,500.20	
Cash		\$2,500.20
For interest due to-day on bonds.		

If, instead, bonds are sold at premium and amount applicable to month is \$41.60 while nominal interest is \$416.70, entry is:

Interest	\$375.10	
Premium on Bonds	41.60	
Interest Accrued		\$416.70
To charge interest with interest cost for month, set up liability for interest accrued, and amortize due amount of Premium on Bonds account.		

Even though coupons are payable only at office of issuing company, best plan is to draw check for full amount of interest due and deposit as a special account, against which coupons as presented are charged. The amount at any time remaining in this account represents amount of the company's liability on unredeemed coupons. Amounts owing on coupon bonds are a continuing obligation so that the amounts not immediately called for should be kept in readiness for liquidation of overdue coupons. Instead of the term "Interest Accrued" such expressions as "Accrued Bond Interest" and "Accrued Interest Coupons" may be used. Also instead of "Interest Account," "Bond Interest Account" may be employed as being more distinctive.

Checks in payment of interest on registered bonds may be sent either by treasurer of issuing company or by fiscal agent. They should reach payees not later than date on which interest falls due.

Where **two or more bond issues** are outstanding, these must be carefully distinguished in the entries, although if suitable explanations are made it may not be desirable to enter separate journal entries for each issue.

To illustrate, The American Produce Co. on Mar. 1, 19—, issues \$1,000,000 of first and refunding 5% bonds, interest payable Mar. 1 and Sept. 1. On July 1 it issues \$2,000,000 collateral trust 6% bonds, interest payable July 1 and Jan. 1. If monthly entries are made to charge Interest and credit Interest Accrued, entry on June 30 is:

Bond Interest	\$ 4,166.67	
Bond Interest Accrued		\$ 4,166.67
To show interest accrued on \$1,000,000 first and refunding 5% bonds during month of June.		

On July 31 the entry is:

Bond Interest..............................	$14,166.67	
Bond Interest Accrued................		$14,166.67

To show interest accrued during month of June on the following outstanding bond issue:

	Bonds Outstanding	Interest Accrued
1st and ref. 5% bonds........	$1,000,000	$ 4,166.67
Col. Tr. 6% bonds........	2,000,000	10,000.00
	$3,000,000	$14,166.67

Since interest coupons on first and refunding bonds become due on Sept. 1, 19—, following entry is necessary on Aug. 31, 19—:

Bond Interest Accrued..........................	$25,000	
Bond Coupons No. 1.......................		$25,000

For 6 months' interest on $1,000,000 1st and refunding bonds due Sept. 1, 19—.

A similar entry is necessary for interest falling due on the collateral trust bonds, Jan. 1, 19 —. If a check is issued to a fiscal agent to enable him to make payment of coupons due, entry is:

Aug. 31, 19—

Perth Trust Co., Trustee.........................	$25,000	
Cash (or Audited Vouchers).................		$25,000

For amount transferred to meet interest due Sept. 1, 19—, on $1,000,000 1st and refunding 5% bonds.

The liability account "Bond Coupons No. 1" remains a liability until all coupons are redeemed. The trust company renders a monthly report of payments made. If on Sept 30, it reports that $24,500 of No. 1 coupons have been paid, following entry is made:

Bond Coupons No. 1............................	$24,500	
Perth Trust Co., Trustee....................		$24,500

For coupons redeemed by Perth Trust Co., Trustee, during Sept., as per statement submitted.

Treasury bonds are bonds of issuing company acquired by gift or donation. So long as they remain uncanceled, interest thereon is handled in usual manner, total amount required to meet interest on issue being turned over to fiscal agent and coupons being cashed in same manner as on bonds of other companies owned.

Interest paid on **guaranteed bonds** by guaranteeing company should be charged to company whose bonds are guaranteed. At time cash is advanced, credit **Cash** and charge **Advances to Subsidiary Companies.** On books of company whose bond interest is paid, charge **Bond Interest** and credit **Advances from..........Company.**

Interest on **income bonds** is similar to dividends on stock, being paid only if earned. If earnings justify conclusion that it is certain to be paid, monthly entries showing its accrual should be made as soon as declared payable by the board of directors, charging **Interest on Income Bonds.** or, if monthly

accruals have been entered, **Interest Accrued on Income Bonds,** and crediting **Interest Payable on Income Bonds.** When payment is made this account is charged.

DISCOUNT AND PREMIUM ON BONDS.—Bonds usually are issued at a figure above or below par. Consequently the nominal and effective interest rates differ. The **nominal rate** is the percentage of annual interest payment to par of bonds. The **effective rate** is the true interest cost per annum. For a full exposition of principles governing effective interest rate, see section on "Mathematics." **Bond premium** is a deduction from interest. **Bond discount** is an addition to interest. Both must be spread equitably over the life of the bond. This process is known as amortization in the case of bond premium, and accumulation in the case of bond discount. Sometimes companies having large surpluses write off discount on bonds in one sum. This is conservative procedure but not theoretically accurate. Sometimes bond premium is carried to Surplus. This is more objectionable. Chief objection to either practice is that true interest cost of borrowed money is obscured. Correct procedure, in case of **bond discount** or **bond discount and expense,** is to debit a certain part thereof to Interest, simultaneously crediting the Discount account. In case of bond premium, correct procedure is to credit a certain part thereof to Interest, simultaneously charging the Premium account. Principles governing bond amortization and accumulation are explained in section on "Mathematics." Entries are outlined as follows:

Bonds sold at discount, redeemable at par:

At time of sale:

Cash (amount received)...........................	$......	
Discount on Bonds (amount of discount)............	......	
Bonds (par value)........................		$......

At time of periodical interest payment:

Interest (amount of interest plus proportion of discount applicable to current period)..................	$......	
Discount on Bonds (part applicable to current period).............................		$......
Cash................................		....

Bonds sold at premium, redeemable at par:

At time of sale:

Cash (amount received)...........................	$......	
Premium on Bonds (amount of premium)......		$......
Bonds (par value)........................		....

At time of periodical interest payment:

Interest (nominal interest less part of premium applicable to current period)....................	$......	
Premium on Bonds (part applicable to this period)....	....	
Cash (amount paid)......................		$......

Bonds issued at par, redeemable at premium:

At time of sale:

Cash (amount received)...........................	$......	
Bonds (par value)........................		$......

At time of periodical interest payment:

Interest (nominal amount plus part of premium applicable to period)	$......	
Premium on Bonds (part applicable to period)		$......
Cash (amount paid)		......

Bonds sold at discount, redeemable at premium:

At time of sale:

Cash (amount received)	$......	
Bond Premium and Discount (amount of discount)	......	
Bonds (par value)		$......

At time of periodical interest payment:

Interest (nominal interest plus proper part of discount given at time of sale and of premium to be paid when bonds are redeemed)	$......	
Bond Premium and Discount (proper part of discount given at time of sale and of premium to be paid when bonds are redeemed)		$......
Cash (amount paid)		......

When bonds are issued at a discount and redeemable at a premium, the **Bond Discount and Premium** account balance changes from a debit to a credit equivalent at time of redemption to premium to be paid on bonds.

For method of determining actual interest rate see section on "Mathematics." By the **equal instalment method,** the effective rate is ignored and interest actually paid is charged plus a proportionate part, according to term of issue, of discount on issue or premium on redemption, or minus a proportionate part, according to term of issue, of premium received at time of issue.

Equal Instalment Method Illustrated.—The King Manufacturing Co. sells issue of $2,000,000 5% first mortgage bonds at 90 flat. Expenses of issue amount to $10,000. Interest is payable semiannually, so that **bond discount and expense** is $210,000. One-fortieth of $210,000 is $5,250, amount to be amortized to interest each 6-month period. At end of first 6-month period entries are:

Interest on Bonds	$105,250	
Interest Accrued on Bonds		$100,000
Bond Discount and Expense		5,250
For interest accrued, $100,000 on $2,000,000 first mortgage bonds, and to amortize 1/40 of bond discount and expense, being amount applicable to current period.		
Interest Accrued on Bonds	$100,000	
Cash		$100,000
For payment of interest due on $2,000,000 first mortgage bonds.		

Under the **bonds outstanding method,** the premium or discount is distributed over the period during which the bonds are outstanding in the proportion that bonds outstanding each year bear to sum of bonds outstanding for all years. The following table is taken from A. Lowes Dickinson's "Accounting Practice and Procedure" (p. 141).

In practice the buying up of outstanding bonds for sinking fund purposes and the redemption of bonds at irregular intervals are **disturbing factors.** When

Bond Amortization Table

Period ½ Year	Bonds Outstanding	Proportion of Outstanding Bonds to Total Bonds	Amount of Discount Instalment	Interest Payment	Profit on Bond Purchase	Annual charge to Profit and Loss
1	$ 1,000,000	100/1050	$ 11,905	$ 25,000	$ 4,000	$ 32,905
2	950,000	95/1050	11,310	23,750	4,000	31,060
3	900,000	90/1050	10,714	22,500	3,500	29,714
4	850,000	85/1050	10,119	21,250	3,500	27,869
5	800,000	80/1050	9,524	20,000	2,500	27,024
6	750,000	75/1050	8,929	18,750	2,500	25,179
7	700,000	70/1050	8,333	17,500	1,500	24,333
8	650,000	65/1050	7,738	16,250	1,500	22,488
9	600,000	60/1050	7,143	15,000	1,000	21,143
10	550,000	55/1050	6,548	13,750	1,000	19,298
11	500,000	50/1050	5,952	12,500	2,500	15,952
12	450,000	45/1050	5,357	11,250	2,500	14,107
13	400,000	40/1050	4,762	10,000	1,500	13,262
14	350,000	35/1050	4,167	8,750	1,500	11,417
15	300,000	30/1050	3,571	7,500	500	10,571
16	250,000	25/1050	2,976	6,250	500	8,726
17	200,000	20/1050	2,381	5,000	....	7,381
18	150,000	15/1050	1,786	3,750	....	5,536
19	100,000	10/1050	1,190	2,500	....	3,690
20	50,000	5/1050	595	1,250	....	1,845
	$10,500,000		$125,000	$262,500	$34,000	$353,500

bonds are bought in the open market at less than the redemption price specified a saving is made. Although not strictly accurate, this gain may be credited to Profit and Loss, a proportionate part for each of the remaining years the issue is outstanding. When the redemption dates are anticipated, treatment becomes complicated. The **equal instalment method** does not work under these conditions, and if the **effective interest method** is employed it becomes necessary to recompute the rate on basis of bonds remaining outstanding and new redemption terms.

Illustration of Various Methods.—The following illustration of the various methods of bond discount and premium is taken from A. Lowes Dickinson's "Accounting Practice and Procedure" (pp. 136–140):

An issue of $1,000,000 of bonds is made at 90, carrying interest at 5%, and redeemable at the rate of $50,000 each half-year, at 100 for the first 5 years, and thereafter at 105. Calculations made on these premises show that the effective rate of interest is approximately 8 3/16%. Bonds are redeemed each as specified, but they are purchased in the market at the following prices, viz.:

1st year	92	6th year	100
2nd year	93	7th year	102
3rd year	95	8th year	104
4th year	97	9th and 10th drawn at	105
5th year	98		

Methods of Computing Bond Discount and Premium

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Period ½ Year	Payments for Interest at 5% per annum (a)	Effective Interest charge at 8 3/16% per annum (b)	Discount provided for (2) — (1)	Surplus on purchase at less than redemption price	Charge to Income on effective interest method	Charge to Income on equal annual Instalment Method	Charge to Income when Discount written off on Bonds outstanding method	Charge to Income when Discount charged to Profit and Loss account
1	$25 000 00	$36,843.75	$11,843.75	$4,000.00	$32,843.75	$27,250.00	$32,905.00	$21,000.00
2	23,750.00	35,001.56	11,251.56	4,000.00	31,001.56	26,000.00	31,060.00	19,750.00
3	22,500.00	33,159.38	10,659.38	3,500.00	29,659.38	25,250.00	29,714.00	19,000.00
4	21,250.00	31,317.19	10,067.19	3,500.00	27,817.19	24,000.00	27,869.00	17,750.00
5	20,000.00	29,475.00	9,475.00	2,500.00	26,975.00	23,750.00	27,024.00	17,500.00
6	18,750.00	27,632.81	8,882.81	2,500.00	25,132.81	22,500.00	25,179.00	16,250.00
7	17,500.00	25,790.63	8,290.63	1,500.00	24,290.63	22,250.00	24,333.00	16,000.00
8	16,250.00	23,948.44	7,698.44	1,500.00	22,448.44	21,000.00	22,488.00	14,750.00
9	15,000.00	22,106.25	7,106.25	1,000.00	21,106.25	20,250.00	21,143 00	14,000.00
10	13,750.00	20,264.06	6,514.06	1,000.00	19,264.06	19,000.00	19,298.00	12,750.00
11	12,500.00	18,421.88	5,921.88	2,500.00	15,921.88	16,250.00	15,952.00	10,000.00
12	11,250.00	16,579.69	5,329.69	2,500.00	14,079.69	15,000.00	14,107.00	8,750.00
13	10,000.00	14,737.50	4,737.50	1,500.00	13,237.50	14,750.00	13,262.00	8,500.00
14	8,750.00	12,895 31	4,145.31	1,500.00	11,395.31	13,500.00	11,417.00	7,250.00
15	7,500.00	11,053.12	3,553.12	500 00	10,553.12	13,250.00	10,571.00	7,000.00
16	6,250.00	9,210.94	2,960.94	500.00	8,710.94	12,000.00	8,726.00	5,750.00
17	5,000.00	7,368.75	2,368.75	......	7,368.75	11,250.00	7,381.00	5,000.00
18	3,750.00	5,526.56	1,776.56	......	5,526.56	10,000.00	5,536.00	3,750.00
19	2,500.00	3,684.38	1,184.38	......	3,684.38	8,750.00	3,690.00	2,500.00
20	1,250.00	{1,842.19	1,232.80	......	2,482.80	7,500.00	1,845.00	1,250.00
(c)	Extra	{640.61						
			$125,000.00	$34,000.00	$353,500.00	$353,500.00	$353,500.00	$228,500.00
		1/20th	=$6,250.00					

(a) Interest at 2½% for each half-year on $1,000,000, less $50,000 each half-year.
(b) Interest at 4 3/32% for each half-year on $900,000, less $45,000 each half-year.
(c) Balance due to approximation in effective rate.

The table on page 262 gives all the essential figures. In this table, the last four columns show the charges to Income account on the basis (5) of the effective interest method; (6) of the equal instalment method; (7) of the bonds outstanding method; and (8) of charging all discount and premium to surplus; in each case crediting to Income account the surplus arising from purchasing bonds at less than the fixed redemption price.

If the latter be credited direct to Surplus, or carried in the Bond Discount account until all discount has been written off by the operation of these credits and the balance of the effective rate, then at the end of the 11th half-year in the first case and at the end of the 15th half-year in the second, the discount will be extinguished and thereafter only the actual interest paid, less surplus on market purchases, will be charged to Income.

BOND REDEMPTION.—Various arrangements are made by issuing companies for redemption of outstanding bonds. The most popular is the **sinking fund method.** Funds are of two types: (a) those in which the principal only is to be employed for redemption purposes; (b) those in which both principal and interest thereon are to be so employed.

Funds must be distinguished from **reserves.** Funds are assets. Reserves are credits and appear usually on the liability side of the balance sheet; although in case of valuation reserves (which are not reserves of surplus) they are frequently deducted from an asset item in the balance sheet. A **reserve of surplus** is created by a charge to surplus and a credit to a reserve account. This does not mean that a fund is created also. To do this an additional entry, accompanied by a transaction, is necessary. The transaction consists in making an actual transfer of cash to some special account and allowing it to remain there, usually to accumulate at compound interest, or investing it in securities and allowing the principal to increase both by periodic increases from without and by growth resulting from interest accretions. Various modifications of this procedure may exist. Thus interest may not be added to principal. Theoretically a reserve and its corresponding fund might be expected always to be equal. In practice various things may cause them to be unequal. Funds, moreover, do not accumulate in exact accord with compound interest formulas because of the practical impossibility of investing income so that at no time will any of it remain idle. When a reserve of surplus is established, the effect is to prevent the distribution of so much wealth as dividends, but it remains a part of the general funds unless set aside in the form of a fund, as explained above. For purposes of bond redemption, funds are desirable, because the wealth represented by a reserve may not be in the necessary form when the redemption date arrives.

Trust deeds usually provide instructions for the establishment of sinking funds for bond issues. Sometimes they provide that these shall be created out of profits. If so, this is accomplished by a charge to **Surplus** and a credit to **Sinking Fund Reserve,** or similar title. Retirement of bonds does not affect the reserve, which should then be transferred to Surplus.

A **true sinking fund** must:

1. Be in form of cash or securities.
2. Accumulate at compound interest.
3. Be established to pay at maturity a debt now owing or certain to be incurred.

If the fund is employed to cancel bonds before maturity, it is a **redemption fund.** If the bonds are merely bought up and made a part of the fund, thus remaining as liabilities on the balance sheet, the fund remains a sinking fund.

The **Sinking Fund account** should be charged with value of assets transferred

to it from general funds and with income derived from money already in the fund. It should be credited with amounts disbursed therefrom.

Accounts descriptive of the form which the sinking fund takes may be desirable, as, **Sinking Fund Securities, Sinking Fund Cash,** etc. Cash paid from the sinking fund for securities to be put into it is a charge to Sinking Fund Securities and a credit to Sinking Fund Cash.

The **Sinking Fund Income account** should be credited with income in form of interest or dividends received from sinking fund securities, and charged when this is transferred to Profit and Loss or to the Sinking Fund Reserve account.

The **Sinking Fund Expense account** should be charged with all expenses incurred in connection with the operation of the sinking fund, and credited when its balance is transferred to Profit and Loss or to the Sinking Fund Reserve account.

Regulations of Interstate Commerce Commission regarding **sinking fund accounts** of railroad companies provide that these accounts shall include cash, ledger value of live securities of other companies, and other assets held by sinking fund trustees to pay off outstanding debts. Assets held in hands of accounting company's treasurer when the assets are segregated under a distinct fund are to be included. Also amounts deposited with sinking fund trustees on account of mortgaged property sold, the proceeds of which are to be held for redemption of securities. Also par value of live securities issued or assumed by accounting company and held in such funds. A separate account is required for each fund, the title of which must designate the obligation in support of which the fund is created.

Regarding **sinking fund reserves,** the Commission's ruling is to the effect that the Sinking Fund Reserve account shall include net balances in accounts to which are credited definite appropriations of surplus, whether held in general funds or placed in hands of a trustee as a sinking fund or redemption fund. It also includes income accruing to such a fund.

For a discussion of method of determining **sinking fund annuities,** see section on "Mathematics."

ENTRIES FOR SINKING FUND TRANSACTIONS. — The trustee may be an individual or a trust company. The trustee renders such reports as are necessary to enable the company to bring summary entries upon the books.

Having determined the amount of the equal periodic instalments to be paid to the trustee of the sinking fund by principles explained elsewhere (see section on "Mathematics"), the transfer of cash into the trustee's hands is indicated by an entry charging **Sinking Fund** or the **name of the trustee,** and crediting Cash. Thus if the semiannual deposit with the trustee is to be $17,521.52, the entry is:

Sinking Fund Trustee	$17,521.52	
Cash		$17,521.52
For deposit of cash with trustee in accordance with deed of trust of 6% first mortgage sinking fund bonds due Jan. 1, 1932.		

Instead of title, "Sinking Fund Trustee," other possible ones are: "Sinking Fund Cash," "Sinking Fund of First Mortgage 6% Bonds of 1932," "Columbia Trust Co., Trustee," etc.

Interest earned by the sinking fund must be accounted for by the company which creates the fund. Assume trustee reports earnings semiannually on above fund. At end of 6 months his report shows earnings of $350.43. Upon receipt of report following entry is in order on company's books:

Sinking Fund Trustee............................	$350.43	
Sinking Fund Income......................		$350.43
To record income earned on sinking fund in hands of trustee for 6 months ending..........		

Ordinarily the sinking fund income will in turn be carried to Profit and Loss, although it may be credited directly to the Sinking Fund Reserve. Unless there is specific reason for doing otherwise, the former procedure should be followed. Unless there is definite provision in the trust deed, the sinking fund income may (a) be turned over to the corporation, (b) be added to the sinking fund, (c) be used to reduce amount of the succeeding instalment. In case of **true sinking funds** the income is added to the fund. If desirable to show monthly accruals of sinking fund income, this following entry may be made:

Accrued Sinking Fund Income......................	$58.41	
Sinking Fund Income........................		$58.41
To show accrued income on sinking fund for month ending...........		

When income is received by the trustee, as shown by statement submitted, **Accrued Sinking Fund Income** is credited and **Sinking Fund Trustee** is charged.

If the trustee invests the funds in securities, an entry should be made as soon as report of transaction is received from trustee, charging **Sinking Fund Investments** and crediting **Sinking Fund Trustee** for amount thus invested. As income is received on these investments and reported to the company, **Sinking Fund Trustee** is charged and **Sinking Fund Income** credited.

If the trust deed specifies that the sinking fund reserve and the sinking fund must be kept equal, then for each accretion to the fund there must appear a credit to the reserve, while for each reduction of the fund there must appear an equivalent charge to the reserve. The Surplus account is charged or credited accordingly as the reserve is credited or charged.

When sinking fund cash is employed to purchase company's own securities, these may be either canceled or kept alive in the sinking fund. In former case the fund is a redemption fund; in the latter case it is a true sinking fund. If outstanding bonds are purchased for the sinking fund at a premium the premium is an expense which must be charged off at once or be amortized over remaining life of bonds. If a corporation buys $50,000 of its outstanding bonds at 105, the entry is:

Sinking Fund Investments........................	$50,000	
Premium on Sinking Fund Investment.............	2,500	
Sinking Fund Trustee......................		$52,500

Under the federal income tax law of 1921, such premium above issuing price or face value is considered an expense of the year in which bonds are repurchased or retired. Similarly, if repurchased or retired at less than issuing price or face value, the difference is regarded as income for the current year. For provision applicable in case of bonds issued at a premium or a discount, consult Treasury regulations. In order to conform with these requirements, many corporations write off such premiums in year securities are repurchased.

The **trustee** must keep **complete accounts** for all transactions relating to the funds intrusted to him. These accounts must be in agreement with those of the corporation which he serves. The trustee acts in the capacity of a **fiduciary**, and the principles of fiduciary accounting apply. Accounts should be kept with **Cash** and **Investments**, preferably as many investment accounts as there are investments. When the trustee receives cash from the company, he charges

Cash and credits **Sinking Fund** or **Bond Redemption Fund** of so and so company. The charge to this account occurs when the bonds are redeemed or paid at maturity. If the trustee pays interest on outstanding bonds of the company, he charges **Cash** and credits **Interest Payable** when money is received therefor from company. As the coupons are paid, **Cash** is credited and **Interest Payable** charged.

ILLUSTRATIONS OF SINKING AND REDEMPTION FUNDS.—1. The Robert Gair Co. First Mortgage Gold 7's, dated Jan. 1, 1922, due Jan. 1, 1936. Authorized, $6,000,000; outstanding $4,000,000. Redeemable on any interest date on 30 days' notice at 110 and interest up to Jan. 1, 1923, and ½% less each year thereafter. Commencing May 1, 1923, an amount equal to 15% of net earnings of preceding calendar year, but not less than $150,000 annually, to be devoted to retirement by purchase or by call of these bonds at not over then existing redeemable price. Company has right to tender bonds of this issue at par, in lieu of cash to satisfy sinking fund requirements. Minimum annual sinking fund will be increased by an amount equal to 5% of any additional bonds issued.

2. The National Tube Co. First Mortgage Gold 5's, dated May 1, 1912, due May 1, 1952. Authorized, $15,000,000; outstanding, $12,271,000. Redeemable at 105 and interest on any interest date upon 6 weeks' notice. Beginning May 1, 1916, 1% annually of all bonds issued to be applied to purchase or redemption of these bonds at not over 105 and interest. Bonds so redeemed to be kept alive and interest added to sinking fund.

3. The Sinclair Pipe Line Co. 20-Year Sinking Fund Gold 5's, dated Oct. 2, 1922, due Oct. 1, 1942. Authorized, $25,000,000; outstanding $25,000,000. Within 3 months after Oct. 1, 1924, and within 3 months after each succeeding Apr. 1 and Oct. 1, respectively, the company will expend the sum of $425,000 in the purchase in the open market of bonds of this issue, if obtainable at prices not exceeding face value thereof and accrued interest. If at expiration of any such 3 months' period amount expended in purchase of bonds for such period shall be less than $425,000, company shall pay over to the trustee amount of such deficiency, if more than $10,000. Trustee shall invite tenders for sale of bonds at prices not exceeding face value thereof and accrued interest, and any unexpended balance shall be returned to company and carried on its books as a special reserve for retirement of bonds. From time to time thereafter, company will use its best efforts to purchase from such reserve as many bonds as possible, at not exceeding face value thereof and accrued interest, provided that in no case shall it be required to purchase in any one year from said reserve more than $1,000,000 aggregate principal amount. All bonds purchased in accordance with foregoing provisions shall be canceled by trustee and permanently retired. The company may exceed its sinking fund obligation in any period and to that extent receive credit therefor in any subsequent period.

4. Oregon & California R. R. Co. First Mortgage Sinking Fund Gold 5's, dated July 1, 1887, due July 1, 1927. Authorized, $20,000,000; outstanding, $17,505,000. Net proceeds from sale of lands shall be applied to purchase of these bonds at not exceeding par; but in case they cannot be purchased at this figure, they shall be redeemed by lot as soon as the sum of $50,000 has accumulated. As of Dec. 31, 1921, there were held in fund $37,000 Southern Pacific Equipment A and B 4½'s and $38,000 Southern Pacific First Refunding 4's.

5. American Can Co. 15-Year Debenture Sinking Fund Gold 5's, dated Feb. 1, 1913, due Feb. 1, 1927. Authorized, $15,000,000; outstanding, $9,655,500. On or before May 1, 1914, and in each year thereafter, company must pay

to trustee $500,000 in cash, to be invested in bonds of this issue at not exceeding 102½ and accrued interest, or, if not so purchasable, to be used to call bonds by lot at that price. This will result in retirement of approximately $7,000,000 bonds before maturity. All bonds acquired by sinking fund must be canceled.

6. Anaconda Copper Mining Co. 10-Year Secured Gold 6's, Series A, and 7's, Series B, dated Jan. 1, 1919, due Jan. 1, 1928. It is required that $1,500,000 per annum, payable semiannually on Jan. 1 and July 1 each year beginning July 1, 1921, be used for purchase and retirement of such Series A and Series B bonds as may be tendered on most advantageous terms; to the extent that if bonds cannot be purchased at prices to yield 6% or more per annum, unexpended moneys shall revert to company.

7. Hershey Chocolate Corp. First Lien Gold 7½'s, dated June 1, 1920, due June 1, 1930. Authorized, $10,000,000; outstanding, $9,004,900. It is required that $125,000 quarterly beginning Sept. 1, 1920, and in addition within 90 days after Dec. 31, 1920, a sum equal to amount, if any, by which 14 7/12% of net income for preceding year shall exceed sum of $250,000; and within 90 days after close of each year after the year 1920, a sum equal to the amount, if any, by which 25% of net income of year preceding such payments shall exceed sum of $500,000, shall be applied to purchase of bonds at not exceeding current redemption prices. If on May 1 in any year unapplied moneys shall amount to $50,000 or more, same shall be applied to redemption of bonds on June 1 next succeeding, at current redemption price.

A **study of foregoing provisions** shows that it is now customary to make redemption of outstanding issues before maturity rather than to permit all sums paid into the fund to accumulate until the entire issue can be paid off *in toto*. There are **five ways in which bonds may be redeemed:**

1. Through sinking fund at maturity.
2. Serially.
3. Conversion into stock.
4. Called in for redemption before maturity.
5. Refunding at maturity.

REDEMPTION THROUGH SINKING FUND.—Strictly speaking, a sinking fund is one employed to pay off bonds at maturity. In practice this use of the term is departed from. When bonds are paid out of sinking fund at maturity, entries required are comparatively simple. When notice is received from trustee to effect that all investments have been converted into cash in preparation for liquidation of indebtedness, charge **Sinking Fund Cash** and credit **Sinking Fund Investment.** When bonds are paid off by trustee, charge **Bonds** and credit **Sinking Fund Cash.** If a **Sinking Fund Reserve** account has been set up, it should now be closed into Surplus.

SERIAL REDEMPTION.—Serial bonds are usually redeemed in fixed sums each year but frequently with a proviso that later maturities may be redeemed upon certain conditions.

Illustration.—Fisher Body Corp. 6% Serial Gold Notes, due $1,000,000 each Aug. 1, 1923 to 1925. Redeemable as a whole or in series (in which latter case the series first maturing must be first redeemed) on any interest date upon 60 days' notice, at following prices with accrued interest: 101½ for notes then having 2 years or more, but less than 3 years to run; 101 for notes then having 1 year or more, but less than 2 years to run; 100½ for notes then having less than 1 year to run.

If redeemed at par, charge **Serial Bonds** and credit **Cash.** If redeemed at a premium, credit **Cash** and charge **Serial Bonds** and **Premium on Serial Bonds.**

CONVERSION.—A convertible bond is one which can be converted into other securities of the issuing corporation. Usually such bonds are convertible into common stock, and are thus given speculative flavor.

Illustration.—Cerro de Pasco Copper Corp. 10-Year Convertible Gold 8's are convertible into stock of the corporation at rate of 30 shares stock for each $1,000 bond, equivalent to a price of $33 1/3 per share of stock. Should bonds be called for redemption, convertible clause remains in force to and including redemption date. Where such privilege exists provision must be made so that sufficient authorized but unissued stock will be in existence to make the conversion should the bondholders demand it. At time of conversion charge **Convertible Bonds** and credit **Unissued Capital Stock.**

CALLING FOR REDEMPTION.—Many bond issues floated in recent years are made **callable** for redemption because of the high interest rate necessitated by abnormal war conditions, at which they were put out.

Illustration.—Cerro de Pasco Copper Corp. 10 Year Convertible Gold 8's, dated Jan. 1, 1921, due Jan. 1, 1931, are redeemable at 105 and interest on any interest date, upon 60 days' notice. Armour & Co. 7% Convertible Gold Notes, dated July 15, 1920, due July 15, 1930, are redeemable at 105 and interest upon 60 days' notice. Where collateral trust bonds are redeemed and pledged collateral is released, an entry should be made charging **Investments** and crediting **Pledged Investments.**

REFUNDING AT MATURITY.—No special problems arise. Sufficient cash should be on hand in sinking fund to liquidate issue. If not, a transfer of cash to trustee sufficient to make full payment should be made.

SINKING FUND ILLUSTRATED—A company issues 20-year sinking fund bonds on Jan. 1, 1919, bearing 6% interest, payable semiannually, Jan. 1 and July 1. Trust deed requires yearly contributions to a sinking fund which are to accumulate at compound interest. Bonds sell at a premium. Show pro forma journal entries on following dates:

Jan. 1, 1919	Jan. 1, 1920
July 1, 1919	Jan. 1, 1939

Jan. 1, 1919

Cash	$......	
First Mortgage Bonds		$......
Premium on Bonds		......

For sale of 20-year first mortgage bonds bearing interest at 6%, due Jan. 1, 1939, interest payable semiannually.

July 1, 1919

Premium on Bonds	$......	
Interest on Bonds		$......

One-fortieth of premium on bonds applicable to interest.

Interest on Bonds	$......	
Cash		$......

For interest on bonds, due July 1, 1919.

Jan. 1, 1920

Premium on Bonds	$......	
Interest on Bonds		$......

One-fortieth of premium on bonds applicable to interest.

Interest on Bonds	$......	
Cash		$......
For interest on bonds due Jan. 1, 1920.		
Surplus	$......	
Sinking Fund Reserve		$......
To reserve surplus for sinking fund.		
Sinking Fund Trustees	$......	
Cash		$......
For yearly payment to sinking fund trustees as per trust deed.		
Jan. 1, 1939		
Premium on Bonds	$......	
Interest on Bonds		$......
One-fortieth of premium on bonds applicable to interest.		
Surplus	$......	
Sinking Fund Reserve		$......
To reserve surplus for sinking fund.		
Sinking Fund Trustees	$......	
Cash		$......
For yearly payment to sinking fund trustees as per trust deed.		
First Mortgage Bonds	$......	
Sinking Fund Trustees		$......
For retirement of 20-year 6% first mortgage bonds, due this day.		
Sinking Fund Reserve	$......	
Surplus		$......
To transfer Sinking Fund Reserve to Surplus upon retirement of bonds.		

Partnership Incorporated

OBJECTS OF INCORPORATION.—Partnerships are incorporated for various reasons, chief among which are the limited liability thus secured and the possibility of expansion through sale of capital stock.

PROCEDURE.—Before transferring assets to corporation it is necessary to make a valuation of them, in order that the partners will secure a fair interest in the corporation. **Good-will** is an item of importance and one which may have been given no value on books of partnership. The valuation placed on partners' assets should not be so great as to militate against future welfare by making disposition of stock to outsiders difficult. Value of good-will should be based on excess earning power of partnership. (See section on "Good-Will.") Roughly, good-will value can be determined by capitalizing earnings on a percentage which represents the normal return stockholders would expect to receive in such an enterprise. If partnership earns 15% on capital of partners and the public secures 6% on money invested in stocks of companies doing a similar business and affording equivalent security, the difference between 15% and 6%, or 9%, represents earning power of good-will. Thus if profits of

partnership amount to $15,000 on partners' combined capital accounts of $100,000, the difference between $100,000 and the capitalization of $15,000 on a 6% basis, or $250,000, gives value of good-will, $150,000. Having ascertained value of good-will, make an entry in books of partnership charging **Good-Will** and crediting **Capital** account of partners with their due proportions thereof.

Capitalization of company which is to supersede the partnership must be determined on basis of present and future requirements.

If **old books** are continued, such alterations must be made as are necessary to the corporation. The partners' accounts should be closed and such accounts opened as are peculiar to corporation accounting.

Illustration.—Balance sheet of Johnson & Thorpe, after adjustment for good-will, is as follows:

Balance Sheet—Johnson & Thorpe
As at January 1, 19—

Real Estate	$27,000	Johnson, Capital	$45,000
Good-Will	25,000	Thorpe, Capital	30,000
Merchandise	6,000	Accounts Payable	6,000
Accounts Receivable	16,000		
Cash	7,000		
	$81,000		$81,000

This balance sheet shows net worth at figure at which partners are willing to make the exchange for stock. The corporation, to be called the Johnson-Thorpe Co., is to have an authorized capital stock of $100,000, of which $75,000 is to be given to the old partners—$45,000 to Johnson and $30,000 to Thorpe.

A formal entry for capital stock authorized is:

Unissued Capital Stock	$100,000	
Capital Stock Authorized		$100,000
For total capital stock authorized, as per charter.		

Johnson and Thorpe are next charged as subscribers, thus:

Subscribers	$ 75,000	
Unissued Capital Stock		$ 75,000

Next an entry is necessary to charge the partners' Capital accounts and credit Subscribers account, thus:

Johnson, Capital	$ 45,000	
Thorpe, Capital	30,000	
Subscribers		$ 75,000

To close Capital accounts against subscriptions.

If additional unissued stock is sold, suitable entries are required to show this, but these are no different than those explained elsewhere.

If **new books** are to be used by the corporation, all accounts in the old books must be closed and all assets and liabilities transferred to the new ledger. In the books of the partnership the Johnson-Thorpe Co. should be charged with value of assets taken over and credited with amount of liabilities assumed, thus:

Johnson-Thorpe Co.	$81,000	
Real Estate		$27,000
Good-Will		25,000
Merchandise		6,000
Accounts Receivable		16,000
Cash		7,000

To charge the Johnson-Thorpe Co. for value of assets of firm of Johnson & Thorpe as per conditions of agreement made between Johnson & Thorpe and the Johnson-Thorpe Co., which latter is to take over the assets and assume the liabilities of the firm of Johnson & Thorpe.

Accounts Payable	$ 6,000	
Johnson-Thorpe Co.		$ 6,000

To credit the Johnson-Thorpe Co. with the liabilities of the firm of Johnson & Thorpe, these accounts being assumed by the Johnson-Thorpe Co. as per agreement.

Johnson-Thorpe Co. now stands charged on books of Johnson & Thorpe for $75,000. This is the amount of stock of the Johnson-Thorpe Co. subscribed by the partners, Johnson & Thorpe. Upon receipt of stock by Johnson & Thorpe, following journal entry is made:

Capital Stock of Johnson-Thorpe Co.	$75,000	
Johnson-Thorpe Co.		$75,000

To charge capital stock of the Johnson-Thorpe Co. for amount received, $75,000, this being the consideration for which Johnson and Thorpe agree to sell their interest to the Johnson-Thorpe Co.

The following entry closes the accounts now remaining open on the books of Johnson & Thorpe:

Capital, Johnson	$45,000	
Capital, Thorpe	30,000	
Capital Stock of Johnson-Thorpe Co.		$75,000

In books of Johnson-Thorpe Co. entry should be made to charge assets taken over from Johnson & Thorpe, to credit Subscribers account, assuming that this account has been opened, and to credit liabilities assumed, as follows:

Real Estate	$27,000	
Good-Will	25,000	
Merchandise	6,000	
Accounts Receivable	16,000	
Cash	7,000	
Subscribers		$75,000
Accounts Payable		6,000

To bring upon books assets purchased from Johnson & Thorpe, to credit liabilities of Johnson & Thorpe assumed, and to credit Subscribers account with excess of assets purchased over liabilities assumed.

Trial balance of ledger of Johnson-Thorpe Co. follows:

Trial Balance—Johnson-Thorpe Co.

Real Estate	$27,000	Capital Stock	$75,000
Good-Will	25,000	Accounts Payable	6,000
Merchandise	6,000		
Accounts Receivable	16,000		
Cash	7,000		
	$81,000		$81,000

This Agreement for Incorporation made this 28th day of April, 19—, by and between Robert Lowell, Walter F. Mason, and Norman Lowell, copartners in the manufacture and sale of chemicals and chemical supplies in the city of Chicago, under the firm name of Lowell, Mason & Company, and Nelson G. Oliver and George Dickson, copartners in the manufacture of chemicals, also in the city of Chicago, under the firm name of Oliver & Dickson.

Witnesseth:

1. That the business heretofore conducted by each of the above-named firms shall be amalgamated and incorporated under the laws of the State of Illinois as the Lowell-Mason Chemical Company.

2. That the capital stock of said corporation shall be Five Million Dollars ($5,000,000), consisting of Three Million Dollars ($3,000,000) of common stock, being 30,000 shares of the par value of One Hundred Dollars ($100) each, and Two Million Dollars ($2,000,000) of seven per cent (7%) cumulative preferred stock, being 20,000 shares of the par value of One Hundred Dollars ($100) each. Three Million Dollars ($3,000,000) of the common stock, being the entire issue thereof, and One Million Dollars ($1,000,000) of the preferred stock, is to be issued full-paid in exchange for the said businesses as going concerns as hereinafter stated, including all of their assets, credits, trade-names, formulas, and good-will, and said incorporated company shall assume all of the outstanding liabilities of the said firms as existing at the time of transfer on the date of final organization.

3. That the stock of the said corporation shall be issued full-paid as follows: To the aforesaid firm of Lowell, Mason & Company, One Million, Five Hundred Thousand Dollars ($1,500,000) of common stock and Five Hundred Thousand Dollars ($500,000) of preferred stock, distributed to the partners as follows:

Robert Lowell,	7,500	shares	common	and	2,500	shares	preferred
Walter F. Mason,	6,000	"	"	"	2,000	"	"
Norman Lowell,	1,500	"	"	"	500	"	"

To the aforesaid firm of Oliver & Dickson, One Million, Five Hundred Thousand Dollars ($1,500,000) of common stock and Five Hundred Thousand Dollars ($500,000) of preferred stock, divided equally between the partners.

The remaining stock, being One Million Dollars ($1,000,000) of preferred stock, is to be underwritten by Baker, Wilson & Shaw, bankers, at 95 (5% commission), a contract to that effect having already been executed.

4. And it is covenanted and agreed that Two Hundred Thousand Dollars ($200,000) of common stock shall be returned by the aforesaid contracting parties to the corporation, One Hundred Thousand Dollars ($100,000) from each firm, to be treasury stock and to be given to the said bankers free of charge as a bonus with the One Million Dollars ($1,000,000) of preferred stock subscribed by them.

Form 8. Agreement for Incorporation

TWO PARTNERSHIPS INCORPORATED.—Two Chicago partnerships are to be incorporated, entire business of each being transferred to a corporation. In Illinois entire capital stock must be subscribed and one-half paid up before company can begin operations; therefore partnership agreements to take stock appear in application for charter. Actual transfer of partnership assets and liabilities to the corporation is not made until latter is completely organized and ready to make contracts. Transfer to corporate form does not require any change in established policy of management or in method of keeping books, except in so far as capital accounts must be altered. Preliminary agreement for incorporation is shown in Form 8.

Preferred stock for $1,000,000 is underwritten by bankers who agree to take entire block at 95. The $50,000 difference between par and 95 is a selling expense. Bonus of treasury stock given bankers may be entered on books, as shown later, or be transferred from stockholders to bankers or to new purchasers without being entered on books. Bankers frequently turn over check to company in full payment for stock underwritten and receive in return a check for difference between this amount and underwritten price, this amount being charged to **Commissions** or **Underwriting Expense.** In present case 50% of par value of underwritten stock ($500,000) is paid at the time, and a check for $25,000 (5% commission on 50% of underwritten stock) is given. Remainder of underwriters' subscription will be paid later.

Balance sheets of the two partnerships, Lowell, Mason & Co. and Oliver & Dickson, as of May 1, 19—, before incorporation, are given below. These statements and data from incorporation agreement form basis for opening entries on books of new company.

Lowell, Mason & Company
Balance Sheet as at May 1, 19—

Assets		Liabilities		
Land	$ 100,000	Mortgage Payable		$ 100,000
Buildings	150,000	Interest Accrued		2,500
Machinery and Tools	115,000	Notes Payable		40,000
Patents and Patterns	72,800	Interest Accrued		1,500
Trucks and Motors	25,000	Accounts Payable		30,250
Fuel and Supplies	12,400	Accrued Taxes		6,500
Raw Material	52,800	Reserve Accounts:		
Work in Process	57,300	For Depreciation		12,000
Finished Stock	44,900	For Bad Debts		2,200
Deferred Charges to Operating	9,250	Capital Accounts:		
Investments in Stocks and Bonds	143,700	Robert Lowell	$500,000	
Notes Receivable	142,000	Walter F. Mason,	400,000	
Accounts Receivable	174,800	Norman Lowell	100,000	1,000,000
Cash	95,000			
	$1,194,950			$1,194,950

Oliver & Dickson
Balance Sheet as at May 1, 19—

Assets		Liabilities		
Leasehold .... $	156,000	Notes Payable (Secured) . $		126,000
Machinery and Tools	85,000	Accounts Payable		136,300
Delivery Equipment	30,000	Interest Accrued		1,600
Fuel and Supplies	9,400	Accrued Operating Charges		10,700
Patents and Patterns	122,000	Capital Accounts:		
Raw Material	75,100	Nelson G. Oliver,	$500,000	
Work in Process	80,900	George Dickson,	500,000	1,000,000
Finished Stock	198,000			
Deferred Charges	12,300			
Bonds and Securities	150,000			
Accounts Receivable, Net (book value $223,000) ...	221,500			
Cash	134,400			
	$1,274,600			$1,274,600

Opening entries for new company should record correctly and in due sequence various transactions involved in incorporation of the company and in transferring to it, in exchange for capital stock, entire plant, business, and net assets of each firm.

May 1, 19—

Lowell, Mason & Co.	$2,000,000	
Oliver & Dickson	2,000,000	
Baker, Wilson & Shaw	1,000,000	
Common Stock		$3,000,000
Preferred Stock		2,000,000

The Lowell-Mason Chemical Co. is incorporated this day under the laws of Illinois, with a capital stock of $5,000,000, divided into 30,000 shares of common stock of the par value of $100 each, and 20,000 shares of 7% cumulative preferred stock of the par value of $100 each. From the firms above debited, subscriptions have been received for the entire common and preferred stock of the company, the distribution of this stock, as per agreement for incorporation, the subscription list, and the certificate of incorporation, being as follows:

	Shares	
Name	Common	Preferred
Robert Lowell	7,500	2,500
Walter F. Mason	6,000	2,000
Norman Lowell	1,500	500
Nelson G. Oliver	7,500	2,500

George Dickson	7,500	2,500		
Baker, Wilson & Shaw	......	10,000		
Total	30,000	20,000		
Land			$ 100,000	
Buildings			150,000	
Machinery and Tools			115,000	
Patents and Patterns			72,800	
Trucks and Motors			25,000	
Fuel and Supplies			12,400	
Raw Material			52,800	
Work in Process			57,300	
Finished Stock			44,900	
Deferred Charges to Operating			9,250	
Investments in Stocks and Bonds			143,700	
Notes Receivable			142,000	
Accounts Receivable			174,800	
Cash			95,000	
Good-Will			1,000,000	
Mortgage Payable				$ 100,000
Interest Accrued				4,000
Notes Payable				40,000
Accounts Payable				30,250
Accrued Taxes				6,500
Reserve for Depreciation				12,000
Reserve for Bad Debts				2,200
Lowell, Mason & Company				2,000,000

To record in the ledger the various specific assets and liabilities turned over by Lowell, Mason & Co. as a going concern, in full payment of stock subscriptions to 15,000 shares of common and 5,000 shares of preferred stock of the company, as per agreement for incorporation. (See minute book, page 5.) All right, title, and interest in the assets of Lowell, Mason & Co. are conveyed to the Lowell-Mason Chemical Co., and all liabilities of that firm are assumed by the Lowell-Mason Chemical Co., as per agreement for incorporation.

Leasehold	$ 156,000
Machinery and Tools	85,000
Delivery Equipment	30,000
Fuel and Supplies	9,400
Patents and Patterns	122,000
Raw Material	75,100
Work in Process	80,900
Finished Stock	198,000
Deferred Charges	12,300
Bonds and Securities	150,000
Accounts Receivable	223,000

Cash	134,400	
Good-Will	1,000,000	
Notes Payable (Secured)		$ 126,000
Accounts Payable		136,300
Interest Accrued		1,600
Reserve for Bad Debts		1,500
Accrued Operating Charges		10,700
Oliver & Dickson		2,000,000

To record the specific assets and liabilities turned over by Oliver & Dickson, taken by this company as a going concern, as per agreement for incorporation. (See minute book, page 5.)

Entries for payment by underwriters showing commission and turning over of donated stock follow:

Cash	$500,000	
Baker, Wilson & Shaw		$500,000

Payment of 50% of subscription of Baker, Wilson & Shaw, underwriters, to $1,000,000 of preferred stock.

Organization Expense	$ 31,000	
Cash		$ 31,000

By order of the Directors for payment of various expenses incurred during the incorporation of the company, including 5% commission to Baker, Wilson & Shaw on $500,000 of stock subscription. (*Give items in detail.*)

Treasury Stock—Common	$200,000	
Stock Donation Account		$200,000

2,000 shares of common stock donated to the company in accordance with the agreement for incorporation, as follows:

Lowell, Mason & Co.	1,000 shares
Oliver & Dickson	1,000 "

Stock Donation Account	$200,000	
Treasury Stock—Common		$200,000

For the bonus of 2,000 shares of common stock transferred to Baker, Wilson & Shaw as per underwriting contract, being one share of common stock for every five of preferred stock underwritten. This stock has been donated by the incorporators and is full-paid and non-assessable.

Method of closing partnership books is illustrated in detail by closing entries for Lowell, Mason & Co. Somewhat different procedure is shown in condensed form for Oliver & Dickson. Frequently old books are retained. In present instance new books are opened, consequently all asset and liability accounts must be closed on partnership books and balances transferred to cor-

poration's accounts. Each firm is allowed $1,000,000 for good-will. The two firms receive stock of new company in exchange for assets. This is in turn given to the former partners as per agreement. Entries to close accounts of Lowell, Mason & Co. are shown below:

May 1, 19—

Good-Will	$1,000,000	
Robert Lowell		$ 500,000
Walter F. Mason		400,000
Norman Lowell		100,000
To place upon the books good-will of $1,000,000 in accordance with agreement for incorporation of the Lowell-Mason Chemical Co. entered into April 28, 19—. Good-Will apportioned according to the partners' holdings.		
Lowell-Mason Chemical Co.	$2,194,950	
Land		$ 100,000
Buildings		150,000
Machinery and Tools		115,000
Patents and Patterns		72,800
Trucks and Motors		25,000
Fuel and Supplies		12,400
Raw Material		52,800
Work in Process		57,300
Finished Stock		44,900
Deferred Charges to Operating		9,250
Investments in Stocks and Bonds		143,700
Notes Receivable		142,000
Accounts Receivable		174,800
Cash		95,000
Good-Will		1,000,000
Plant, good-will, and sundry assets turned over to the Lowell-Mason Chemical Co. in exchange for $2,000,000 par value of stock of that Company as per agreement for incorporation.		
Mortgage Payable	$ 100,000	
Notes Payable	40,000	
Interest Accrued	4,000	
Accounts Payable	30,250	
Accrued Taxes	6,500	
Reserve for Depreciation	12,000	
Reserve for Bad Debts	2,200	
Lowell-Mason Chemical Co.		$ 194,950
To close accounts and transfer to Lowell-Mason Chemical Co. all of the liabilities of this firm, as per agreement for incorporation.		

Only accounts now remaining open on books of Lowell, Mason & Co. are partners' Capital accounts and debit against Lowell-Mason Chemical Co.

When required amount of stock of this company is received and distributed to former partners, following entries are made on books of Lowell, Mason & Co.

Stock of Lowell-Mason Chemical Co.	$2,000,000	
Lowell-Mason Chemical Co.		$2,000,000
For 20,000 shares of stock of Lowell-Mason Chemical Co. received today in full payment for net assets shown in the previous entries. The stock is issued in the partners' names as follows:		

Names	Shares Com-mon	Shares Pre-ferred	Par Value
Robert Lowell...	7,500	2,500	$1,000,000
Walter F. Mason	6,000	2,000	800,000
Norman Lowell..	1,500	500	200,000
Total.......	15,000	5,000	$2,000,000

Robert Lowell	$1,000,000	
Walter F. Mason	800,000	
Norman Lowell	200,000	
Stock of Lowell-Mason Chemical Co.		$2,000,000
For distribution of the above-mentioned stock to the partners, and to close the Capital accounts of the firm.		

A different plan of closing partnership books is shown in following entries for Oliver & Dickson.

Good-Will	$1,000,000	
Nelson G. Oliver		$ 500,000
George Dickson		500,000

(*Full explanation here.*)

Lowell-Mason Chemical Co.	$2,000,000	
Sundry Liabilities (*listed separately*)	276,100	
Good-Will and Sundry Other Assets (*listed separately*)		$2,276,100

(*Full explanation here for transfer of all assets and liabilities.*)

Nelson G. Oliver	$1,000,000	
George Dickson	1,000,000	
Lowell-Mason Chemical Co.		$2,000,000
To close Capital accounts of the partners upon distribution to them of stock of the Lowell-Mason Chemical Co.:		

Name	Shares Common	Shares Preferred
Nelson G. Oliver......	7,500	2,500
George Dickson.......	7,500	2,500
Total...........	15,000	5,000

Balance sheet of new company is as follows:

Lowell-Mason Chemical Company

Balance Sheet as at May 1, 19—

Assets		Liabilities	
Land	$ 100,000	Mortgage Payable	$ 100,000
Buildings	150,000	Notes Payable	166,000
Machinery and Tools	200,000	Accounts Payable	166,550
Patents and Patterns	194,800	Interest Accrued	5,600
Leasehold	156,000	Accrued Taxes and Charges	17,200
Trucks and Motors	25,000	Reserve Accounts:	
Delivery Equipment	30,000	For Depreciation	12,000
Fuel and Supplies	21,800	For Bad Debts	3,700
Raw Material	127,900	Capital Stock:	
Work in Process	138,200	Common	3,000,000
Finished Stock	242,900	Preferred, 7% Cumulative	2,000,000
Deferred Charges to Operating	21,550		
Investments	293,700		
Notes Receivable	142,000		
Accounts Receivable	397,800		
Cash	698,400		
Subscriptions to Stock	500,000		
Organization Expenses	31,000		
Good-Will	2,000,000		
	$5,471,050		$5,471,050

Proprietorship Incorporated

PROCEDURE.—C. W. Hampton, in the wholesale and retail mercantile business, incorporated as of May 9, 19—, under name of Hampton Trading Corp., capital stock $250,000, shares 2,500, of par value of $100 each.

Charles W. Hampton

Balance Sheet, as at May 1, 19—

Assets		Liabilities	
Land	$ 30,000	Mortgage on Warehouse	$ 25,000
Store and Warehouse	50,000	Loans from Bank	10,000
Store Equipment	8,500	Notes Payable	17,750
Delivery Equipment	9,000	Accounts Payable	22,800
Office Equipment	4,400		
Merchandise	46,300	Total Liabilities	$ 75,550
Accounts Receivable	16,400	Charles W. Hampton, Capital Account	105,140
Notes Receivable	9,350		
Cash	6,740		
	$180,690		$180,690

The shares have been subscribed for as follows:

Name	Address	Shares	Amount
Charles W. Hampton	New York City	1,250	$125,000
Samuel Johnson	"	500	50,000

James J. Miller	New York City	500	50,000
Lincoln Webster	Albany, New York	100	10,000
Robert W. Kester	"	100	10,000

Hampton is to receive 1,250 shares of full-paid stock in exchange for his business, including assets and liabilities as per balance sheet. Subscribers are to pay 50% on subscriptions when business is taken over, and remainder on Aug. 9. Good-Will is to be brought in at $19,860, which is excess of capital stock paid, $125,000, over Hampton's net worth, $105,140, as shown per balance sheet. The **opening entry** is as follows:

May 9, 19—

Charles W. Hampton	$125,000	
Samuel Johnson	50,000	
James J. Miller	50,000	
Lincoln Webster	10,000	
Robert W. Kester	10,000	
Unissued Stock	5,000	
Capital Stock		$250,000

Hampton Trading Corp. incorporated with an authorized capital of $250,000, divided into 2,500 shares of $100 each, subscribed for as follows:

Charles W. Hampton	1,250 shares
Samuel Johnson	500 "
James J. Miller	500 "
Lincoln Webster	100 "
Robert W. Kester	100 "
Unissued Stock	50 "

Subscriptions payable 50% in cash and balance Aug. 9, 19—.

At time of incorporation certain necessary expenses must be advanced by incorporators or by the attorney in charge. These are reimbursed after organization. All cash entries are given in cash book shown below. Only remaining journal entry required is that recording transfer of assets and liabilities from Hampton to the corporation.

Cash Book

19—			19—		
May 9	Samuel Johnson (Paid on May 2)	$ 500	May 9	Organizing Expenses:	
	Charles W. Hampton (balance transferred)	6,740		Organization Tax	$ 125
	Lincoln Webster	5,000		Filing Certificate	10
	Samuel Johnson	24,500		Recording Fees	20
	James J. Miller	25,000		Counsel's Fee	250
	Robert W. Kester	5,000		Accountant's Fee	250
	(Payment of first instalment of 50% on subscriptions to stock.)			Other Outlays	200
				Balance	65,885
		$66,740			$66,740

Cash turned over by Hampton is included in the journal entry to show all assets and liabilities together. This plan is preferable because it sets forth the entire transaction. Cash account is ticked in the journal and general ledger account in the cash book, to indicate that they are not to be posted. If this were not done the items might be posted from both books.

Land	$30,000	
Store and Warehouse	50,000	
Store Equipment	8,500	
Delivery Equipment	9,000	
Office Equipment	4,400	
Merchandise	46,300	
Accounts Receivable	16,400	
Notes Receivable	9,350	
Cash	6,740	
Good-Will	19,860	
Mortgages Payable		$25,000
Bank Loans		10,000
Notes Payable		17,750
Accounts Payable		22,800
Charles W. Hampton		125,000

For the entire assets and liabilities of Charles W. Hampton, taken over this day in full payment of his subscription. A good-will of $19,860 is allowed over and above the net worth indicated by his balance sheet. (See minutes of stockholders and of directors for authority and for further details.)

An account should be opened for **Unissued Stock.** When final payments are made by subscribers on Aug. 9, 19—, subscribers' accounts are credited and Cash debited, in cash book. In **stock ledger** records of stock holdings of each subscriber must appear. Instalment receipts are issued as payments are received. Stock certificates are made out when final payments on subscriptions are made.

Reserves and Surplus

NATURE OF SURPLUS.—In a balance sheet the Surplus account is measured by the excess of assets over liabilities and capital. The term **surplus** is used generally to represent the difference between net worth and par value of outstanding stock, or, in case of no-par stock, between net worth and amount received for the stock.

ORIGIN OF SURPLUS.—Surplus may arise in the following ways:

1. Ordinary operations of business.
2. Donation of company's own stock.
3. Revaluation of assets.
4. Sale of stock above par.

The following **outline** shows debits and credits to Surplus.

Surplus

Debit: At the close of each fiscal period, for the net loss, if any, as shown by the Profit and Loss account.

For any adjustment during the fiscal period which diminishes the profits of a previous fiscal period.

For the amount of extraneous or unusual losses.

For amounts set aside so as not to be available for dividends.

For the discount on the sale of the corporation's capital stock.

For amounts by which the book values of assets are decreased other than through wear and tear.

For the amounts of dividends declared.

Credit: At the close of each fiscal period, for the net profit, if any, as shown by the Profit and Loss account.

For any adjustments made during a fiscal period which should have been credited to some profit and loss account within a prior fiscal period; or which increase the profits of a prior fiscal period.

For the amount of extraneous or unusual profits.

For amounts previously set aside as not available for dividends, and now returned to the general surplus.

For the premiums received on the sale of the corporation's capital stock.

For amounts by which the book value of fixed assets is increased.

For amounts of donations to the corporation.

SURPLUS ADJUSTMENTS.—Corrections or omissions applicable to previous years should be adjusted directly through the Surplus account, not through current Profit and Loss. Thus if an invoice for $527 was wrongly entered:

Purchases	$572	
Accounts Payable		$572

The adjustment, when the error is discovered in the following year, is:

Accounts Payable	$ 45	
Surplus		$ 45

Usually there is no objection to the making of **minor adjustments** through current Profit and Loss, however; but they must not be so large as to have a material effect on showing of current operations.

Gains and losses not related to customary operations should not be permitted to affect current operating results, thus destroying their usefulness for comparative purposes. It is sometimes advisable to make adjustment for such extraordinary profits and losses directly through Surplus; but discretion should be exercised in this respect. The Federal Income Tax Laws have tended in the opposite direction, because the Bureau of Internal Revenue expects all items affecting current profit to be handled through Profit and Loss, in order that book profit may be proved by adding back to taxable income, income items not taxable and subtracting expenses not deductible. If unusual gains and losses are carried direct to Surplus, an awkward adjustment is necessary.

CLASSIFICATION OF RESERVES.—H. A. Finney classifies and describes reserves as follows:[2]

[2] *Journal of Accountancy*, Oct. 1922, pp. 251–261.

"I. **Profit and loss reserves,**[3] set up by debits to Profit and Loss, because some expense, properly chargeable to current operations, has resulted in
- (a) A decrease in the value of an asset; or
- (b) The creation of a liability.

II. **Surplus reserves,** representing
- (a) Conservative provisions for possible future losses, not already incurred; and
- (b) Appropriations of surplus, earmarked as unavailable for dividends because of
  - (1) Contracts with bondholders, other creditors, or preferred stockholders, in relation to sinking fund.
  - (2) Action by stockholders or directors intended to limit the payment of dividends for various financial reasons.

III. **Reserves for unrealized profits.**"

Following is a summary of Professor Finney's discussion:

Profit and loss reserves are set up by charges to nominal accounts or some section of the Profit and Loss account. They are necessitated by the fact that some expense has reduced net profit for the period. To be a true profit and loss reserve, the account must represent a provision for an expense or a loss which has already been incurred and is properly chargeable to current income. It is not necessary that its amount be definitely ascertainable, but there must be a certainty, or at least a high degree of probability, that the loss has actually been incurred as a result of past operations.

To show difference between a **profit and loss reserve** and a **surplus reserve,** assume that a company owns valuable machinery which it uses in manufacturing a peculiar type of product. A reserve for depreciation is necessary because of the certainty that depreciation is continually taking place. Since depreciation is a proper charge against current operations, the reserve for depreciation is profit and loss reserve.

The product manufactured by this machine may be superseded by some other article, or a new machine may be invented which will render the machine now owned obsolete. It may therefore be desirable to set up a reserve for supersession or obsolescence. This will not be a profit and loss reserve because the loss has not yet occurred, there is no certainty that it will ever occur, and if it does occur it will not be a result of the company's operations. If a provision is made for this possible loss and it would be conservative to make such a provision, it should be made out of surplus. The account representing the provision should be recognized as a part of the surplus and be shown so on the balance sheet.

Profit and loss reserves may be divided into two subclasses: reserves representing deductions from value of assets, and reserves representing liabilities.

In connection with reserves representing deductions from value of assets, term **reserve** should be used only in case amount of expense or loss, and consequently amount of decrease in asset value, cannot be definitely computed. This is the case with reserves for depreciation, reserves for depletion, and reserves for bad debts. These titles should be retained. The layman is fairly familiar with them. The deduction of the reserve from the related asset account makes the nature of the reserve self-evident. The layman can be relied upon to realize that an exact computation of the deduction is impossible and that the reserve is an estimate.

[3] Finney suggests that the term "reserve" be restricted to accounts of this class, and that other terms be applied to accounts belonging in other classes.

Reserves have often been set up to record decreases in asset values which are exactly measurable. Assume example of a company which leases property for 10 years and makes leasehold improvements which will revert to the owner of the real estate at expiration of lease. The asset of leasehold improvements decreases in value exactly 1/10 of cost. Since amount of annual reduction in value is definitely known, it is preferable to write down the asset.

As to subclass of profit and loss reserves representing liabilities for expenses already incurred, the amount of the liability may be only an estimate, or it may be definitely known. If only an estimate, there can be no objection to use of **reserve title,** although it is clearer to use a self-defining title, as **estimated liability for taxes.**

As to **surplus reserves,** the two subclasses have this feature in common: they are part of surplus and should be so shown on the balance sheet. As to first subclass, conservative provisions for contingent losses, it may be further subdivided, for if the contingency becomes a reality, loss may result in decreasing the value of an asset or in creating a liability. To illustrate, assume books are closed using market value of inventory at Dec. 31, which is lower than cost; but there is danger that the market may still further decline, causing additional loss. A reserve is set up by charging Surplus and crediting a Reserve for Market Fluctuations in Inventory. This reserve provides for a contingent loss on an asset.

In the second subclass of **surplus reserves,** i.e., those which are appropriations of surplus for financial purposes, we find the **Reserve for Sinking Fund, Reserve for Working Capital** and **Reserve for Extension of Plant.** For this purpose, it would be advisable to discontinue use of term **reserve** and use the term **appropriated surplus,** as **Surplus Appropriated for Sinking Fund**, etc. The surplus reserve accounts should be shown on balance sheet as part of surplus, thus:

Reserved for Contingent Fire Loss..........	$25,000	
Appropriated for Sinking Fund.............	10,000	
Total Surplus not Available for Dividends ...	$35,000	
Free and Available for Dividends...........	60,000	
Total Surplus......................		$95,000

In case of so-called sinking fund reserves, appropriated surplus should be amount which ought to be in fund if corporation were exactly meeting its obligations in the matter of contributions and if interest were being accumulated at theoretical rate used in determining amount of annual contributions. Thus fund account will show what is actually in the fund, while reserve will show what ought to be in the fund.

These accounts should not be set up by charges to Profit and Loss, and their existence should in no way affect the Profit and Loss account. They may be either contractual or optional. The trust indenture of a bond issue may specifically require segregation of surplus as well as the creation of a fund; or the requirement may be implied by the provision that the sinking fund shall be provided "out of profits." Same may be said if sinking fund is to be used to retire preferred stock.

If Sinking Fund Reserve or Appropriated Surplus account is required by contract, it should not be returned to surplus until last bondholder or preferred stockholder has been paid off through the sinking fund. This question rarely arises regarding sinking funds for bonds, but it does in regard to so-called sinking funds for preferred stock. When a sinking fund is created for bonds,

bonds purchased for the fund are held alive; thus fund and reserve steadily increase in amount until maturity of issue. But sinking fund for preferred stock is increased by contributions and forthwith decreased by purchase and cancellation of stock. The fund rises and falls; it does not steadily accumulate. The appropriated surplus is accumulated to safeguard working capital, to avoid jeopardizing future earnings, and to maintain company in an income-producing position that will enable it to meet future sinking fund requirements for retirement of remaining stock. Last preferred stockholder to be paid off through sinking fund has right to this protection.

Reserves for unrealized profits, the third class of reserves, are set up because fixed assets have increased in market value and because write-up ought not to be carried to Surplus. Finney suggests the title **unrealized increment,** as, **Unrealized Increment in Land Value,** to avoid use of the term **reserve.**

RESERVE FOR INCOME TAX.—Income taxes are a charge against the profits of the year in which levied, not in which paid. If possible, determine amount of income tax for past period at time of closing books. Then make an entry charging **Surplus** or **Profit and Loss** and crediting an **Accrued Taxes** account. Weight of authority advocates charging Surplus, reason being that the income tax is not a charge against profit because (1) it is determined after profit is determined, (2) it is a distribution of profit. Those who advocate charging to Profit and Loss claim that it is not an extraneous item and that Schedule "L" of income tax return is more easily prepared if disbursement is charged against profit and re-added as an unallowable deduction on the schedule. Entry should be in following form:

Profit and Loss (or Surplus)	$.	
Accrued Taxes		$. . . . . .
For federal income tax applicable to current year.		

CLASSIFICATION AND ANALYSIS OF SURPLUS.—The following classification and analysis of surplus, adapted from an article by C. B. Cushman,[4] is given to supplement material in preceding paragraphs.

I. **Sources of Surplus** are:

1. From contributions by the proprietorship.
2. From gifts, awards, or contributions from others than proprietors, where no corresponding service or value is rendered or liability created.
3. From sale of capital assets.
4. From profits or income earned in operation of the business.
5. From writing up book value of assets.

II. **Display of Surplus** involves its proper subdivision by indentation or otherwise so that its origin, appropriation, etc., are duly indicated. In the balance sheet amount available for dividends should be shown. **Three possible places to show reserves** on balance sheet are:

1. As direct deduction from assets to which they definitely apply.
2. As part of analysis of surplus portion of proprietorship.
3. As liabilities.

Inclusion of capital stock obligations with permanent liabilities is giving place to the method wherein all proprietorship measurements are grouped together in the balance sheet, cumulating in a total which displays in one amount net excess of all assets over liabilities.

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[4] *The Accountant*, Oct. 28, 1922, p. 611 *et seq.*

In case of **par-value stock,** this total usually consists of items representing capital stock plus surplus items, or minus deficits, if there be any. Usually it is given a definite designation, as, **book value of capital stock** or **net worth.**

Consideration must be given to relative interest of each group of stockholders in each classification of surplus. **Preferred stockholders** may have no dividend rights whatever in paid-in surplus, if such surplus came from common stockholders only. Amount of earned surplus applicable to preferred stock depends on character and amount of preference, whether cumulative or non-cumulative, participating or non-participating, and amount already paid them in dividends since preference became effective.

Aside from **contractual obligations,** boards of directors have practically free control over surplus. They may set aside certain portions of it for certain purposes, as **Reserves for New Equipment, Reserves for Contingencies,** etc., thus impounding that amount of surplus and rendering it unavailable for dividend purposes. This impounding is often more apparent than real. Usually by vote they may revoke any previous action unless other persons are definitely a party thereto. This is frequently overlooked.

Definite impounding of surplus may at times prove undesirable. Occasion may arise when credit would be impaired and creditors' rights imperiled unless dividends are paid regularly. To do this may necessitate keeping surplus unappropriated.

Surplus arising from revaluation of appreciated assets should be designated separately, as **surplus from appreciation,** and should be definitely separated from other classes of surplus. Assets thus appreciated must be given special treatment under depreciation. Depreciation must be divided into two parts: That applicable to original cost is a charge to income; that applicable to the appreciated part is a deduction from surplus from appreciation.

Surplus arising from **stock donations,** if no inflation exists, is true paid-in capital surplus, representing a contribution of value by stockholders in excess of capital stock issued therefor.

Undistributed earnings applicable to **no-par stock** should be carried to a surplus account; although some have advocated carrying it direct to **Capital account.** If no-par stock is reacquired at a price different from that issue, surplus is affected. Repurchase at an amount in excess of issue price reduces surplus accordingly, and vice versa. If issued at a variety of prices, the Capital account divided by number of shares outstanding gives **average value** of all stock issued. Some advocate use of this average value in determination of premium or discount on reacquired stock. Others advocate use of price at which the particular shares reacquired were issued.

In **consolidated balance sheets** the asset item of investment representing purchase of stock in subsidiaries must be eliminated. In its place appear actual assets and liabilities of company whose stock was purchased. Amounts so substituted seldom agree with purchase price. Any difference necessarily affects consolidated surplus. If, in lieu of the investment assets, net assets of greater book value are brought into the balance sheet, Surplus account is increased by amount of this excess. It is decreased if substituted net assets are less than the investment assets. This change in surplus represents net earnings or loss applicable to the investment and accumulated since date of purchase. Any difference between price and book value of net assets so acquired at that date is covered by an adjustment in **Good-Will.** Surplus may also be affected by adjustment of intercompany items and elimination of intercompany profit in the inventory. See section on "Consolidations."

Reorganization and Receivership

PURPOSES OF REORGANIZATION.—Cook[5] gives three things that may be accomplished by corporate reorganization:

1. Rearrangement of stocks and bonds as to amount, income, or priority.
2. Sale of property to a new corporation for new stocks and bonds.
3. Sale of property by mortgage foreclosure, purchaser buying for himself and such of old stockholders and bondholders as he may associate with him.

REORGANIZATION BY AGREEMENT.—Reorganization by agreement is of two kinds: (1) a readjustment of rights of interested parties—stockholders and creditors; (2) formation of a new corporation and sale of property and business of old corporation to it in return for its securities.

Reduction of stock is a frequent object of reorganization by agreement.

Illustration.—The Harkness Automobile Co., according to its own statement as of June 30, 19—, has $1,000,000 of preferred stock and $3,000,000 of common stock outstanding. Both preferred and common shares are of $100 par value. The surplus amounts to $1,045,000, and among the assets is $1,000,000 of good-will. An audit of books made as of the same date shows obsolete properties, doubtful accounts, and valueless investments to amount of approximately $1,000,000 to be written off. Good-will, however, is left untouched. Following statement based on such valuation is submitted by accountants, showing surplus reduced from $1,045,000 to $45,000.

Harkness Automobile Company and Branches
Balance Sheet as at June 30, 19—
(Before reduction of capital)

Assets		Liabilities	
Cost of Properties and Equipment, including Good-Will	$ 4,500,000	Capital Stock:	
		Preferred	$ 1,000,000
		Common	3,000,000
Securities Owned, of Subsidiary and Other Companies	1,300,000	Bonds Outstanding	2,500,000
		Short-Term Notes	500,000
Sinking Fund Deposit	220,000	Accounts Payable	1,525,900
Cash	235,000	Notes Payable	490,000
Accounts Receivable	1,172,300	Accrued Items	31,200
Notes Receivable	1,370,000	Bond Interest, payable July 1, 19—	62,500
Material, Supplies, and Finished Parts	981,600	Dividend Declared and Unpaid	120,000
Contract Work in Course of Construction	476,300	Sundry Operating Reserves	189,000
Accrued and Prepaid Items	58,400	Indorsement on Notes Discounted	850,000
		Surplus	45,000
	$10,313,600		$10,313,600

5 Corporations, §883.

Stockholders now decide to write off the good-will of $1,000,000 and to add $500,000 to surplus, by reducing the common from $3,000,000 to $1,500,000. Cumulative preferred stock is to remain as before.

Entries to Reduce Stock.—Since new common stock certificates when issued are for one-half number of shares canceled, so that each holder thereof will own 50% of former holdings, each stockholder's account in the stock ledger should be debited with number of shares canceled, and new certificates reissued for balance, old ones being taken up. Another plan is to debit each account for entire number of former shares to close the account, after which the account is credited with actual number of new shares issued. Only entry in general ledger is one to adjust **Capital Stock, Surplus,** and **Good-Will** as follows:

Capital Stock—Common....................	$1,500,000	
Good-Will (or Plant)..................		$1,000,000
Surplus............................		500,000
To record requirements of charter amendment granted this day, reducing number of shares of stock from 30,000 to 15,000 of par value of $1,500,000.		

This cancels **Good-Will account** and creates additional surplus of $500,000, the total now amounting to $545,000.

Status after Reorganization.—Reduction in total par of common stock does not mean that company's net worth is less than formerly, or that a holder of stock has lost anything by charter amendment. Net worth of company is now $3,045,000, as it really was before. Each of 15,000 shares of common stock has book value of $136.33, found by dividing their total book value of $2,045,000 by total number of shares. Book value of preferred stock remains at $100 per share.

REORGANIZATION THROUGH RECEIVERSHIP.—A **receiver** is a fiduciary.[6] No prescribed form of accounts is required to be kept by the receiver. Availability of data is chief consideration. Receiver must state assets and liabilities of company at beginning and end of receivership, and the intervening transactions, in form of statements to the court. These become public records. Forms followed in illustration below require modification in some states. In others there are no specific requirements as to form of accounts. (Note.—See discussion of receivership in section on "Bankruptcy, Insolvency, and Receivership.")

Usually the **general books** of the company are continued as usual until outcome of receivership is known; but they may be adjusted to conform to new conditions. If kept in agreement with books of receiver, adjusting entries are required. One of these charges the receiver with assets taken over by him, debit balance to receiver's account remaining until end of receivership. When assets and liabilities are turned back at end of receivership, if business is to be continued, receiver is credited with net worth thereof, assets being charged and liabilities credited. Amount of charge in receiver's account is adjusted to Surplus; this measures profit or loss during receivership.

The receiver's first step is to take an **inventory and appraisement** of the estate, known as a **statement of affairs.** This is accompanied by a **deficiency account,** showing the capital impairment and its causes. The statement of affairs is prepared from all available information—books, schedules, claims of creditors, etc. In it **liabilities** are distinguished as to unsecured, partially

[6] For discussion of general principles of **fiduciary accounting** see section on "Fiduciaries."

secured, and secured. Contingent liabilities are included. **Assets** are shown at nominal or **book value,** also at **expected to realize** value. **Assets pledged as security** for creditors' claims are separated from unpledged assets. This statement is submitted to the creditors. The **inventory and appraisement** is recorded in the court journal.

Statement of affairs is illustrated as follows. The Excelsior Harvester Co., unable to meet its obligations, goes into receiver's hands July 1, 19—. State-

Statement of Excelsior Harvester Company
At beginning of Receivership, July 1, 19—

ASSETS			Book Value	Appraised Value
Real Estate, Plant, etc.		$12,136,500		
Less: Reserve for Depreciation		897,510		
		$11,238,990		
Less:				
First Mortgage Bonds	$6,500,000			
Reduced by: Cash and Bonds in hands of Trustee	2,296,200	4,203,800		
Company's Equity			$7,035,190	$ 6,435,190
Investments in Affiliated Companies		$ 4,500,000		
Less: Collateral Trust Bonds Secured thereby		4,000,000		
Company's Equity			500,000	....
Merchandise Inventory			2,178,960	2,100,000
Accounts Receivable			3,245,140	3,200,000
Notes Receivable*			2,862,100	2,440,100
Cash on Hand and in Banks			975,850	945,850
Total			$16,797,240	$15,121,140

LIABILITIES	Book Value	Appraised Value
Bank Loans Unsecured	$ 500,000	$ 500,000
Notes Payable	1,490,500	1,490,500
Accounts Payable	2,375,640	2,375,640
Accrued Charges	328,250	328,250
Liability on Notes under Discount (estimated)	....	60,000
Total Unsecured Liabilities	$ 4,694,390	$ 4,754,390
Surplus	2,102,850	
Capital Stock—Preferred, 7% Cumulative	5,000,000	
Capital Stock—Common	5,000,000	
Balance—Excess of Assets over Liabilities, being the Net Worth of the Corporation	....	10,366,750
Total	$16,797,240	$15,121,140

* Notes under discount at bank, $400,000 additional.

FORM 9. Statement of Affairs

ment of affairs is given in Form 9. Equities only are shown in the appraisal, secured liabilities being deducted from assets pledged or mortgaged. Bonds and cash held by trustees are deducted from the corresponding liabilities and the net liability from value of mortgaged assets. Also, collateral trust bonds are deducted from value of pledged securities.

Receiver's appraisal and statement made upon his appointment, July 1, 19—, reveals following conditions:

1. Real estate and plant valuation should be reduced $600,000.
2. Investments have declined $500,000 below book value.
3. Merchandise inventory should be reduced to $2,100,000.
4. Accounts receivable would probably realize $3,200,000.
5. Notes receivable are doubtful to extent of $422,000.
6. $60,000 of notes under discount are likely to be dishonored.
7. $30,000 for dishonored notes of a customer have been charged to company's account by the bank.

Receivership is terminated Dec. 31, 19—, when reorganization occurs. Statement of receiver at date of withdrawal, after 6 months' tenure, follows. It shows adjustments as suggested in statement to the court, also following transactions during his incumbency:

1. $1,200,000 of 6% receiver's certificates issued, due in 4 months, dated Aug. 1, sold at 98.
2. Building extensions previously begun were completed at cost of $500,000, by order of court.
3. Factory was kept running at considerable reduction in capacity.
4. Goods were sold from stock at best prices obtainable, bringing $287,680.
5. $1,724,440 accounts receivable collected.
6. $1,050,880 notes receivable collected, of which $75,000 was applied to notes written off as doubtful.
7. $81,100 paid for accrued taxes and labor.
8. $268,200 expended in cash for material for use in factory.
9. Expenses paid in cash, $76,500; legal fees, $22,500; and amount drawn by receiver upon authority of court, $10,000.

Receiver's accounting records should be independent of company's books. If he retains the accounting staff of the company, he may keep his records in company's loose-leaf binders. Ordinarily receiver's books, as he opens them, do not show company's liabilities until proper proofs of claim are filed with him and allowed by him. He begins his accounts with an inventory of assets only.[7] Debts appear only through payment, or allowance by receiver if he desires to show claim allowed on books.

Receiver opens separate books by making a journal entry setting up assets at appraised value. Appraisal and audit, July 1, 19—, shows reduction of $1,676,100 in value of assets, made up of following items:

Real Estate and Plant	$ 600,000
Investments	500,000
Merchandise	78,960
Accounts Receivable	45,140
Notes Receivable	422,000
Cash in Banks	30,000
	$1,676,100

7 See Wills, Estates and Trusts, by Conyngton, Knapp, & Pinkerton, p. 588.

In order not to lose sight of notes and accounts receivable appraised at nothing or less than par, entire previous book value of such items is entered. An **Allowance for Doubtful Receivables** account is set up for the difference. Thus subsidiary ledgers show all receivables and continued efforts are made to collect them. Failure to realize upon bad ones is not a reflection on receiver, however. Dishonored note deposited by company before receiver took charge also is entered as a receivable, and included in the amount of the reserve. Deposits of cash and securities with trustee of sinking fund and securities for collateral trust bonds are omitted from assets with which receiver charges himself, because they have left the company's control and are in trustee's hands for a specific purpose. As an offset to value of all assets taken over, receiver credits Excelsior Harvest Co. with appraised value of these assets.

Receiver's opening entry is:

Real Estate, Plant, etc.	$6,435,190	
Merchandise Inventory	2,100,000	
Accounts Receivable	3,245,140	
Notes Receivable	2,892,100	
Cash on Hand and in Banks	945,850	
Allowance for Doubtful Receivables		$ 497,140
Excelsior Harvester Co.		15,121,140
To record appraised values of assets and liabilities of Excelsior Harvester Co., in receivership, taken over this day by decree of court.		

Receiver's transactions require opening such nominal accounts as **Sales**, etc. To make the record brief, almost all items of expense are here entered in one **Expense account.** In practice the accounts should be detailed enough to provide a complete classification. Receiver must keep a complete record of all activities to enable him to account correctly to the court. The **cash book** will receive most of the entries, but certain ones may be entered in the journal. Result of cash entries is summarized thus:

Receiver's Cash Account

(Being a record of his transactions from July 1, 19—, to December 31, 19—)

Receipts		Payments	
Balance Turned over to Receiver	$ 945,850	Discount on Receiver's Certificates	24,000
Receiver's Certificates	1,200,000	Real Estate Operations	500,000
Merchandise Sales	287,680	Accrued Charges	81,100
Accounts Receivable	1,724,440	Merchandise Purchases	268,200
Notes Receivable	975,880	Expensés	76,500
Notes Receivable (Doubtful)	75,000	Legal Expenses	22,500
		Salary of Receiver	10,000
		Receiver's Certificates Paid	1,200,000
		Interest on above	24,000
		Balance of Cash on Hand	3,002,550
	$5,208,850		$5,208,850

Form 10. Receiver's Cash Account

The receiver's journal entries, condensed, are:

Excelsior Harvester Co.	$4,754,390	
Claims Allowed		$4,754,390
Recording claims properly presented to receiver and regularly allowed.		
Merchandise Inventory	$ 50,000	
Cost of Sales	218,200	
Merchandise Purchases		$268,200
Bringing Merchandise Inventory account to proper figure and charging balance of purchases into Cost of Sales.		
Allowance for Doubtful Receivables	$75,000	
Recoveries on Doubtful Receivables		$75,000
Charging against reserve amount collected on doubtful note of		

The **trial balance** of the receiver's books, before closing Dec. 31, 19—, but after all above transactions are posted, is:

Trial Balance, December 31, 19—

Real Estate, Plant, etc.	$ 6,935,190	
Merchandise Inventory	2,150,000	
Accounts Receivable	1,520,700	
Notes Receivable	1,841,220	
Cash on Hand and in Banks	3,002,550	
Allowance for Doubtful Receivables		$ 422,140
Excelsior Harvester Co.		10,366,750
Claims Allowed		4,673,290
Discount on Receiver's Certificates	24,000	
Cost of Sales	218,200	
Expenses	76,500	
Salary of Receiver	10,000	
Legal Expenses	22,500	
Interest on Receiver's Certificates	24,000	
Merchandise Sales		287,680
Recoveries on Doubtful Receivables		75,000
	$15,824,860	$15,824,860

The **closing entries** on the receiver's books, made at termination of his activities but before the reorganization, are:

Merchandise Sales	$ 287,680	
Cost of Sales		$ 218,200
Profit and Loss		69,480
Closing merchandising accounts and showing gross profit on sales.		
Recoveries on Doubtful Receivables	$ 75,000	
Profit and Loss		$ 75,000
Closing former account to show gain on realization over appraised value of assets.		
Profit and Loss	$ 157,000	
Discount on Receiver's Certificates		$ 24,000
Expenses		76,500
Salary of Receiver		10,000

Legal Expenses		22,500
Interest on Receiver's Certificates		24,000
Closing expense accounts.		
Excelsior Harvester Co.	$ 12,520	
Profit and Loss		$ 12,520
Charging the net loss of period against the value taken over by the receiver.		
Allowance for Doubtful Receivables	$ 422,140	
Claims Allowed	4,673,290	
Excelsior Harvester Co.	10,354,230	
Real Estate, Plant, etc.		$6,935,190
Merchandise Inventory		2,150,000
Accounts Receivable		1,520,700
Notes Receivable		1,841,220
Cash on Hand and in Banks		3,002,550
Closing the books of the receiver and showing the assets and liabilities turned back to Excelsior Harvester Co.		

The **receiver's statements to the court** may consist of but one account or statement, known as **first and final account,** or it may consist of several state. ments or accounts. The court usually appoints an auditor to pass upon th- receiver's accounts in detail and to report before any distribution of assets is made. The auditor places notices in newspapers announcing that he will sit on a certain date to receive claims and hear complaints on the audited statement. This hearing may be adjourned one or more times. From statement presented by receiver the auditor usually makes up a briefer statement of his own, reciting in brief the receiver's activities introductory to the audited statement. This is filed with the court as a permanent record.

A **satisfactory form of general statement of account** as rendered by the receiver is shown in Form 11, although this may require modification to meet special requirements in some states. Sometimes specific forms are required by statute. Predilections of the judge to whom the statement is to be submitted should be taken into consideration.

This statement is supported by **exhibits** and **schedules.** These include a balance sheet, statement of profit and loss from operations, summary of case account, lists of claims allowed but not paid, and of claims allowed and paidh Satisfactory forms for the more important of these are found below.

The **receiver's balance sheet** at time of closing, showing results of all his transactions, is given in Form 12.

In addition to the exhibits and schedules indicated above, it is sometimes desirable to set up an analysis of receiver's equity, or his account with the company for which he acts as receiver. The summary of cash account may be as shown in Form 10, or opening balance and later receipts may be listed at top of page and disbursements at bottom, total of latter being subtracted from total of former to secure closing balance. A **form for analysis of receiver's equity** is shown in Form 13.

Adjustment of company's books may be made at both beginning and end of receivership, or only at end. If only at end, no entries are made until time of reorganization, when the abandoned accounts are adjusted to new conditions.

Illustration.—Assuming, in case of Excelsior Harvester Co., that accounts are to be adjusted at both beginning and end of receivership, at beginning the following entry is made to adjust asset values:

July 1, 19—

Surplus	$1,736,100	
Real Estate, Plant, etc.		$600,000
Investments		500,000
Merchandise, etc.		78,960
Accounts Receivable		45,140
Notes Receivable		422,000
Cash		30,000
Notes under Discount		60,000
To adjust losses and shrinkage in assets, per appraisement of receiver.		

First and Final Account of the Receiver for
Excelsior Harvester Company
December 31, 19—

DEBITS			
THE RECEIVER CHARGES HIMSELF AS FOLLOWS:			
Inventory and Appraisement of Assets taken over July 1, 19—:			
Equity in Real Estate, Plant, etc.		$6,435,190	
Equity in Investments of Subsidiary Companies.		(none)	
Merchandise Inventory		2,100,000	
Accounts Receivable		3,200,000	
Notes Receivable		2,440,100	
Cash on Hand and in Banks		945,850	
Total Assets taken over			$15,121,140
Additions to Capital:			
For Outlay Increasing Value of Real Estate and Properties		$ 500,000	
Increase in Cash, per Cash Account		2,056,700	
Increase in Value of Merchandise		50,000	
Total Increase in Assets			2,606,700
Total Debits			$17,727,840
CREDITS			
THE RECEIVER CREDITS HIMSELF AS FOLLOWS:			
Claims Allowed and Not Paid, as per schedule		$4,673,290	
Assets Realized and Collected as Follows:			
Accounts Receivable Collected	$1,724,440		
Notes Receivable Collected	975,880		
Total Realization		2,700,320	
Total Credits			7,373,610
Present Accountability			$10,354,230

FORM 11. Receiver's Statement of Account

Financial Statement of Receiver for
Excelsior Harvester Company
At Termination of Receivership Jurisdiction,
December 31, 19—

ASSETS			
Real Estate, Plant, etc.		$12,036,500	
Less: Reserve for Depreciation		897,510	
		$11,138,990	
Less:			
First Mortgage Bonds	$6,500,000		
Reduced by: Cash and Bonds in hands of Trustee	2,296,200	4,203,800	
Receiver's Equity			$ 6,935,190
Investments of Affiliated Companies		$ 4,000,000	
Less: Collateral Trust Bonds Secured thereby		4,000,000	
Receiver's Equity			(none)
Merchandise Inventory			2,150,000
Accounts Receivable			1,475,560
Notes Receivable*			1,464,220
Cash on Hand and in Banks			3,002,550
Total			$15,027,520
LIABILITIES			
Bank Loans Unsecured		$ 500,000	
Notes Payable		1,490,500	
Accounts Payable		2,375,640	
Accrued Charges		247,150	
Claims on Notes under Discount		60,000	
Total Liabilities			4,673,290
Receiver's Equity, Excess of Assets over Liabilities			$10,354,230

* Notes under discount at bank, $400,000 additional.

Form 12. Receiver's Balance Sheet

Analysis of Receiver's Equity

Equity at beginning of receivership		$15,121,140
Loss from operations	$ 12,520	
Claims allowed	4,754,390	
Total deductions		4,766,910
Equity at termination of receivership		$10,354,230

Form 13. Analysis of Receiver's Equity

This reduces company's surplus from $2,102,850 to $366,750, which with capital stock of $1,000,000 makes net worth of $1,366,750 shown by appraisal.

Next **closing entries** are made by charging receiver with equity in assets taken over, thus:

July 1, 19—		
Receiver	$15,121,140	
Real Estate, Plant, etc.		$6,435,190
Merchandise Inventory		2,100,000
Accounts Receivable		3,200,000
Notes Receivable		2,440,100
Cash on Hand and in Banks		945,850
To record transfer of company's assets to the receiver, as per order of the court.		

Receiver's account in company's ledger now shows debit balance of $15,121,140, corresponding with amount of his account with company in receiver's ledger.

Company's accounts, after transferring assets to receiver, are as follows:

Trial Balance, July 1, 19—

Receiver	$15,121,140	
Real Estate, Plant, etc.	5,101,310	
Sinking Fund Investments	2,000,000	
Sinking Fund Cash	296,200	
Investments in Affiliated Companies	4,000,000	
Reserve for Depreciation		$ 897,510
First Mortgage Bonds Outstanding		6,500,000
Collateral Trust Bonds Outstanding		4,000,000
Bank Loans Unsecured		500,000
Notes Payable		1,490,500
Accounts Payable		2,375,640
Accrued Charges		328,250
Notes under Discount		60,000
Capital Stock—Preferred		5,000,000
Capital Stock—Common		5,000,000
Surplus		366,750
	$26,518,650	$26,518,650

Liabilities are not credited to receiver on company's books under above plan. Usually, however, he is credited with them as he reports to court that he has approved the claims. This keeps company's account with receiver in agreement with receiver's account with company. Such entry would be in following form:

Bank Loans Unsecured	$ 500,000	
Notes Payable	1,490,500	
Accounts Payable	2,375,640	
Accrued Charges	328,250	
Notes under Discount	60,000	
Receiver		$4,754,390
Crediting receiver with claims allowed by him and closing those accounts on the company's books.		

As receiver pays off liabilities, he should be credited on books of company.

Profit or loss shown by each report approved by the court should be entered

on company's books, so that following each such report **receiver's account** on company's books will equal amount shown by receiver's account with company. This entry is taken from receiver's operating statement, as follows:

Discount on Receiver's Certificates	$ 24,000	
Cost of Sales	218,200	
Expenses	76,500	
Salary of Receiver	10,000	
Legal Expenses	22,500	
Interest on Receiver's Certificates	24,000	
Merchandise Sales		$287,680
Recoveries on Doubtful Receivables		75,000
Receiver		12,520
Recording operations of the receiver and crediting his account with the loss sustained.		

Entries of this kind accumulate on books until close of company's fiscal period, when income and expense accounts so opened are closed into Profit and Loss and thence into Surplus. In present instance, if company's ordinary closing date is Dec. 31, entry made above is immediately reversed, except that $12,520 credited to receiver is in the reversal charged to Profit and Loss.

At close of receivership, assets may be taken back into ledger accounts; or, as is more customary, assets may not be taken back until reorganization is effected, when various adjustments should be made to reopen ledger in accordance with conditions. But if desirable to bring in assets and liabilities as shown by receiver's final statement, reorganization adjustments being made later, following is form of journal entry:

Real Estate, Plant, etc	$7,832,700	
Merchandise Inventory	2,150,000	
Accounts Receivable	1,475,560	
Notes Receivable	1,464,220	
Cash	3,002,550	
Bank Loans Unsecured		$ 500,000
Notes Payable		1,490,500
Accounts Payable		2,375,640
Accrued Charges		247,150
Reserve for Depreciation		897,510
Notes under Discount		60,000
Receiver		10,354,230
To record existing assets and liabilities on books of the company on termination of receivership (preceding the reorganization adjustments).		

RECEIVERSHIP AND SALE.—If a reorganization cannot be effected, it becomes the receiver's duty to sell enough property to pay (1) expenses of receivership and sale, and (2) creditors of the corporation. If sale of part of assets will put corporation in a solvent position, that will be sufficient. Unsold assets revert to corporation; also any cash remaining from sale of assets after necessary obligations are paid. Principles of accounting are, in general, the same as in preceding illustration. For a detailed illustration of procedure when receiver makes his entries on books of company, see "Corporation Procedure" by Conyngton, Bennett, and Pinkerton, pp. 1331–1348. Also, for further discussion of receivership accounting see section on "Bankruptcy, Insolvency, and Receiverships."

SECTION 5

NET INCOME AND SURPLUS

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 5

NET INCOME AND SURPLUS

DETERMINATION OF NET INCOME.—The determination of net income begins with the accounting for revenue. Revenue is **operating** and **non-operating.** Operating revenue is that derived rom activities for the carrying on of which the business is established. Non-operating revenue is that derived from other sources. From total revenue must be deducted the various expenses of operation, maintenance, and administration in order to arrive at **net** income. The method of showing the various items of income and the deductions therefrom depends upon the character of the enterprise and the accounting methods which have been developed to show results.

Two illustrations of profit and loss or income statements are given below. The first is the profit and loss statement given in the Harvard System of Accounts for Retail Grocers. The second is that of the Brooklyn Edison Co. for the years 1920–1921, and illustrates a form of income statement of a corporation. These are typical of good practice and indicate how, under different conditions, net profit or net income is derived.

The sources of gross earnings as well as the deductions therefrom are determined by the character of the business. These should be classified according to a logical analysis. Gross earnings should be classified on the basis of sources of derivation. Deductions from gross earnings should be classified on the basis of their relationship to the operating cycle. In a manufacturing business the natural order and description of deductions from gross income is:

1. Manufacturing expense
2. Selling expense
3. Administrative expense

Until these deductions have been made, there is no place in the scheme of arrangement to add income other than operating. Having arrived at operating income by deducting manufacturing, selling, and administrative expenses, total net income is secured by adding to operating net income, income from other sources. From total net income are deducted the fixed charges—taxes, interest, etc., leaving net income as a result. The details as to content and arrangement must be determined by the nature of the enterprise.

Terminology should be adopted which best expresses the facts. In so far as possible this should follow standardized practice. Regarding income and expense items there is still great lack of uniformity in terminology. The terms **profit, income, revenue,** and **earnings** are used synonymously. Sometimes the expression "income available for surplus and reserves" is used to signify a sum from which depreciation and depletion reserves are to be provided. Usually **net profits** means that depreciation has been deducted; this is less frequently true of **net earnings.** It may therefore be improper to compare "net earnings" of one concern with "net profits" of another.

Harvard System of Accounts for Retail Grocers—Profit and Loss Statement

For period extending from.........19..to.........19..

MERCHANDISE STATEMENT:				Per-centage
1. GROSS SALES		$........		
2. RETURNS AND ALLOWANCES		....		
3. Net Sales			$........	100%
4. NET INVENTORY OF MERCHANDISE AT BEGINNING OF PERIOD	$........			
5. PURCHASES OF MERCH. AT BILLED COST	....			
6. INWARD FREIGHT AND CARTAGE	....			
7. Sum of Items 4, 5, and 6		$........		
8. CASH DISCOUNTS TAKEN		....		
9. Item 7 Less Item 8		....		
10. NET INVENTORY OF MERCHANDISE AT END OF PERIOD		....		
11. Cost of Merchandise Sold			....	.....
12. Gross Profit			$........	.....
EXPENSE STATEMENT:				
Selling Expense:				
13. WAGES OF SALES FORCE	$........			.....
14. ADVERTISING	....			.....
15. WRAPPINGS AND OTHER SELLING EXP.	....			.....
16. Total Selling Expense		$........		.....
Delivery Expense:				
17. WAGES OF DELIVERY FORCE	$........			.....
18. OTHER DELIVERY EXPENSE	....			.....
19. Total Delivery Expense		....		.....
Buying Expense:				
20. SALARIES OF BUYING FORCE	$........			.....
21. OTHER BUYING EXPENSE	....			.....
22. Total Buying Expense		....		.....
Management Expense:				
23. MANAGEMENT AND OFFICE SALARIES	$........			.....
24. OFFICE SUPPLIES AND POSTAGE	....			.....
25. Total Management Expense		....		.....
Fixed Charges and Upkeep Expense:				
26. INT. ON CAPITAL—BORROWED $........				.....
27. INT. ON CAPITAL—OWNED....				.....
28. Total Interest	$........			.....
29. RENT	....			.....
30. HEAT, LIGHT, AND POWER	....			.....
31. TAXES (except on buildings)	....			.....
32. INSURANCE (except on buildings)	....			.....
33. REPAIRS OF STORE EQUIPMENT	....			.....
34. DEPRECIATION OF STORE EQUIPMENT	....			.....
35. Total Fixed Chgs. and Upkeep Exp.		....		.....
36. MISCELLANEOUS EXPENSE		....		.....
37. LOSSES FROM BAD DEBTS		....		.....
38. Total Expense			....	.....
39. Net Profit (or Loss) (Loss in red)			$........	.....
NET GAIN STATEMENT:				
40. SUNDRY REVENUE (net)		$........		
41. INTEREST AND RENTALS EARNED		....	....	
42. Total Net Gain (or Loss) (Loss in red)			$........	
43. INCOME TAXES		$........		
44. DIVIDENDS (corporation), SHARINGS (partnership), OR WITHDRAWALS (proprietorship)		....	....	
45. Surplus (or Deficit) for the Period (Deficit in red)			$........	

FORM 1. Profit and Loss Statement—Harvard System for Retail Grocers

Brooklyn Edison Company, Inc.
Comparative Financial Statement, 1921–1920

	1921	1920
Gross Operating Revenue	$16,396,880.19	$13,174,874.81
Operating Expenses	9,585,645.60	8,909,990.60
Taxes	1,385,000.00	999,940.39
Reserve for Renewals and Replacements	719,116 49	315,988.44
Total Operating Expenses	11,689,762.09	10,225,919.43
Net Operating Revenue	4,707,118.10	2,948,955.38
Net Non-Operating Revenue	118,217.71	133,994.13
Gross Corporate Income	4,825,335.81	3,082,949.51
Income Deductions:		
Interest on Funded Debt	1,735,374.33	1,182,264.98
Interest on Unfunded Debt	184,637.91	146,000.61
Bond Discount Written Off	132,903.01	92,067.51
Total Income Deductions	2,052,915.25	1,420,333.10
Net Corporate Income	2,772,420.56	1,662,616.41
Appropriations:		
Dividends	1,389,702.00	1,387,366.00
Employes' Profit Sharing	144,807.27	121,897.17
Contingencies	982,836.64	
Total Appropriations	2,517,345.91	1,509,263.17
Surplus for Year	255,074.65	153,353.24
Surplus at Beginning of Year	3,542,756.05	3,629,881.00
Less: Adjustments for Previous Years	156,345.02	240,478.19
Adjusted Surplus	3,386,411.03	3,389,402.81
Surplus at End of Year	3,641,485.68	3,542,756.05

FORM 2. Comparative Income Statement—Brooklyn Edison Co., Inc.

The following definitions are from Montgomery's "Auditing, Theory and Practice":[1]

Gross income means accruals (as distinguished from cash receipts) from all sources, such as sales, rentals, and interest; profits derived from the sale of capital assets, and the excess of previously created reserves over the ascertained need for such reserves.

Net income means the balance of income remaining after deducting from gross income all costs, charges, and expenses (including items accrued but not paid and losses arising from the sale of capital assets).

Montgomery also suggests the following classification of deductions from gross income:

[1] Vol. I, pp. 299, 300

1. Current charges against income, such as cost of goods; cash discounts; allowances not fairly deductible from sales prices; selling, general, and administrative expenses; bonuses to officers and employees; bad accounts and reserves for doubtful accounts; adequate depreciation (when not included in cost of goods), depletion and ordinary obsolescence (if there is such a thing); insurance; proportion of deferred charges carried over as applicable to the current period (if not absorbed—as they should be—in the accounts to which they relate); property and similar taxes paid, accrued, or estimated; and any other charges and expenditures properly chargeable to current operations.
2. Deductions from gross income for interest paid and accrued on borrowed money (but not interest on capital), federal and state income taxes, accrued or estimated.
3. Losses arising from sale of capital assets, and other extraordinary items affecting prior periods.

Legal definitions of net income vary widely. The following is from *Doyle* v. *Mitchell Bros. Co.*:[2]

Whatever difficulty there may be about a precise and scientific definition of "income," it imports, as used here, something entirely distinct from principal or capital either as a subject of taxation or as a measure of the tax; conveying rather the idea of gain or increase arising from corporate activities. As was said in *Stratton's Independence* v. *Howbert*, 231 U. S. 399, 415; 58 L. Ed. 285, 292; 34 Sup. Ct. Rep. 136: "Income may be defined as the gain derived from capital, from labor, or from both combined."

Understanding the term in this natural and obvious sense, it cannot be said that a conversion of capital assets invariably produces income. If sold at less than cost, it produces rather loss or outgo. Nevertheless, in many if not in most cases there results a gain that properly may be accounted as a part of the "gross income" received "from all sources"; and by applying to this the authorized deductions we arrive at "net income." In order to determine whether there has been gain or loss, and the amount of the gain, if any, we must withdraw from the gross proceeds an amount sufficient to restore the capital value that exists at the commencement of the period under consideration.

An **accounting definition** is given by Montgomery:[3]

The term "net income" should be used only to designate the amount arrived at by stating the income actually accrued during a stated period, collected or collectible, less the cost thereof actually paid, and less further costs accrued but not paid, such as depreciation, obsolescence, taxes, and other charges apportioned against the income, such as reserves for strikes, workmen's pensions, etc. Reserves for working capital, unknown contingencies, etc., are not costs, but reservations of profits, and so are not to be considered in determining net income.

NATURE OF SURPLUS.—Net income may be retained in the business or be distributed to the owners. If retained it is added to the capital accounts of partners or sole proprietors, and to surplus of corporations.

Surplus, in its common use, consists of the accumulated undivided profits of the business. Sometimes, however, it is derived from sale of stock above par, from sale of capital assets, or from a revaluation of assets, in which case it is **capital surplus.**

Surplus and **original investment** are usually distinguished by more or less arbitrary methods. Theoretically the Capital Stock account represents original investment of stockholders; but when stock is sold above par, the excess, although part of the investment, is considered under the title of Capital Surplus, being entered in a separate account. Laws make the distinction rather arbitrarily, in attempting to prohibit the impairment of capital, by protecting an amount equal to par value of stock issued in case of corporations with par-value shares. These laws do not prohibit impairment of capital in excess of par of stocks; yet such excess, by being given a distinct classification, is ordinarily removed from surplus applicable to payment of dividends.

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[2] 247 U. S. 179.
[3] Auditing, Theory and Practice, Vol. I, p. 309.

In case of **banks** and **trust companies** it is the custom to sell stock at a premium to reduce the amount of capital stock and therefore the total amount of the double liability frequently imposed by law on the par value of stockholders' shares, the aggregate amount of which is necessarily reduced when stock is sold at a premium instead of at par. The surplus thus arising is not intended for distribution as dividends. In case of sale of **no-par stock,** no uniformity in practice exists as to what part of proceeds is investment and what is surplus. The statutes of the state of incorporation should be investigated on this point. Where statutes place a dollar value on no-par shares, accountants frequently treat this as par value, any excess received above this amount being regarded as surplus. Best practice is to credit No-Par Capital Stock account for entire amount received from sale of stock, regardless of any arbitrary valuation placed thereon.

Original investment plus net earnings less withdrawals equals **capital** or **net worth.**

Analysis of surplus is necessary to show what part is investment and what part represents earnings. In any case mere size of surplus is not a certain index of earnings, because part or all of it may have resulted from sale of stock at a premium and because it may have been reduced by dividend payments.

Surplus is not represented by any specific assets, although it is sometimes customary to assume that it is when a part thereof is said to be invested in securities as a reserve for contingencies. But such securities are no more a part of surplus than are other assets. Surplus cash, not surplus, is what is invested. Usually there is not enough cash on hand to equal surplus because excess of assets over liabilities and capital takes the form of investment in new plant. Surplus accumulates from day to day although it is entered on the books only when they are closed.

POLICY REGARDING SURPLUS.—A large surplus serves as a bulwark against hard times and enables a corporation to pursue a consistent dividend policy. This tends to create a good credit rating. Frequently the dividend rate is fixed at a figure slightly below estimated minimum earnings, thus making certain of regular dividend payments and more or less constant additions to surplus. This policy is especially desirable where income fluctuates widely, because in such cases a larger surplus is desirable than where income is stable.

Surplus is a source of additional capital used for making betterments. It provides a most conservative means of financing because it creates no new obligations. It is the most common method in use of increasing invested capital of corporations. The National Banking Act provides that banks, every 6 months, shall set aside 10% of net profit of preceding half-year as a permanent addition to surplus until amount so set aside reaches 1/5 of par of capital stock.

In some cases the amount of surplus which can be employed in creating additions and betterments is very limited. After all reasonable requirements have been met, any excess of surplus remaining should be distributed to the stockholders as dividends.

When surplus becomes disproportionately large, it is sometimes decided to declare a **stock dividend,** by which capital stock is increased and surplus decreased by equal amounts. Four chief purposes of stock dividend declarations are:

1. To satisfy stockholders who clamor for the distribution of surplus without reducing capital or cash.
2. To give stockholders tangible evidence of increased value of their holdings.

3. To keep market price of stock at a satisfactory figure.
4. To conceal large earnings by distributing them at a lower rate over a larger amount of capital stock.

A **deficit** results when charges to Surplus exceed credits; when such transformation occurs the name of the account may be changed from "Surplus" to "Deficit." An alternative procedure is to adopt the name "Surplus and Deficit," which applies to either situation. In balance sheets deficits should always be so labeled.

Extraordinary gains and losses should be carried direct to Surplus or to a separate division of profit and loss, so that results will not be vitiated for comparative and statistical purposes. Such separate section is necessary if the item is carried to profit and loss, because the ordinary Profit and Loss account should be used only for clearing normal items of income and expense. The chief objection to entering such items direct to Surplus is that it is then made a dumping ground for all sorts of unusual items. Another objection to entering such items directly in Surplus is in the resulting greater difficulty of making reconciliation or proof of Profit and Loss and Surplus required in corporate income tax returns. The Bureau of Internal Revenue expects all items affecting profit of year to be handled through Profit and Loss, so that book profit may be proved by adding back to taxable income items of income not taxable and subtracting expenses not deductible. When charges are made direct to Surplus an awkward adjustment is required. The form of reconciliation is as follows:

Net Taxable Income		$ 43,271.10
Non-Taxable Income:		
Interest on Liberty Bonds		44.00
Other items		none
Total		$ 43,315.10
Unallowable Deductions:		
Donations	$ 160.00	
Income and Profits Taxes Paid	12,362.64	
Other items	none	
Total		12,522.64
Net Profit per books		$ 30,792.46
Surplus at beginning of year		122,360.62
Other Credits to Surplus during year		none
		$153,153.08
Dividends paid	$20,000.00	
Other debits to Surplus	none	
Total		20,000.00
Surplus at close of year		$133,153.08

CREDITS TO SURPLUS.—The chief credits to Surplus are:

1. To record net profit at end of fiscal period.
2. To record increases in net profit applicable to a previous period.
3. To record unusual profits.
4. To record premiums received on sale of capital stock.

5. To adjust increased valuations of fixed assets.
6. To show forfeitures on payments on capital stock subscriptions.
7. To record assessments on capital stock.
8. To record difference between par value of reductions of capital stock outstanding and recompense paid to holders when redemption is at less than par. In case such stock is held for resale the excess of par over purchase price should be carried in an unearned surplus account until actually realized.
9. To record excess in value of tangible assets over par of stock issued therefor.
10. To record profit on sale of treasury stock repurchased for value.
11. To record donations received.

DEBITS TO SURPLUS.—The chief debits to Surplus are:

1. To record net loss at end of fiscal period.
2. To record decreases in net profit applicable to a previous period.
3. To record unusual losses.
4. To record discounts received on sale of capital stock.
5. To adjust decreased valuations of fixed assets.
6. To record amount of dividends declared.
7. To record premiums paid when capital stock is redeemed.

CLASSIFICATION OF SURPLUS.—Fundamentally surplus is divisible into **earned surplus** and **capital surplus.** When the word "surplus" occurs without qualification, **earned surplus** is usually understood, but it is employed to cover both earned and capital surplus above. Earned Surplus is credited with earnings from normal sources and for adjustments increasing the profit of a previous period. It is charged with net losses from normal sources and for adjustments decreasing the profit of a previous period; also for dividends declared.

Undivided Profits account may form a subdivision of Earned Surplus. Sometimes, however, it takes the place of Earned Surplus. Usually it is the account to which earnings are first transferred and from which occasional transfers are made to Surplus. Sometimes it is used as an account in which are carried undistributed or unappropriated profits of last closing, undivided profits of preceding periods being taken to Surplus.

Capital Surplus comprises all surplus not derived from ordinary operations, and is classified as:

1. Unusual or extraneous profits.
2. Premium on sale of capital stock.
3. Forfeited payments on stock subscriptions.
4. Assessments on full-paid stock.
5. Amount by which redemption price of stock retired is less than par.
6. Excess of value of tangible property over stock for which it is received in payment.
7. Profit on sale of treasury stock repurchased for value.

Items 2–7 constitute **paid-in surplus.** Reductions of capital surplus result from debit entries recording conditions just the opposite of those which give rise to above items. All but items 1 and 7 constitute varying kinds of premium on sales of stock. Sometimes such items are carried in **Premium account.** Such premium is, nevertheless, capital surplus. Intangible property is so difficult to value accurately that it is not usual to create a surplus when it is secured in exchange for stock. Capital surplus arises in reorganizations when par of stock issued is less than par of stock previously outstanding and now retired in exchange for the new.

Treasury Stock consists of both **repurchased** and **donated stock.** Repurchase of stock is regulated by law in some states. Stock may be repurchased below, above, or at par. Treasury stock may be carried on books at cost or at its par value, or, if donated, at either estimated value or par. It is a reduction of capital stock outstanding and on the balance sheet is shown as a deduction from capital stock, thus:

Capital Stock	$400,000
Less: Treasury Stock	50,000
Stock Outstanding	$350,000

Purchase of stock at less than par creates an unearned surplus. In case of donated stock this is equal to par of the stock donated. Stock issued for value and then donated back may be resold at less than par without creating any liability on part of buyer for amount of discount. Since property is often turned in for stock at an inflated valuation, surplus resulting from donation of stock issued in payment therefor may be fictitious. No real surplus exists until donated stock is sold, and then only in case the asset values for which the donated stock was originally issued, were not inflated. But since asset values usually are inflated, it may be better policy to reduce book value of assets than to set up surplus, although to do so may run counter to the action of the board of directors in originally placing a valuation on the assets. If surplus is set up, it should be termed **Donated Surplus** or **Working Capital Surplus.** Surplus from donated stock is merely an unrealized increment until the donated stock is actually sold. Oftentimes the surplus arising from this source is overstated because it has not been reduced by discounts incurred on the stock at time of its sale. At time stock is donated, charge **Treasury Stock** and credit **Donations account.** When donated stock is converted into cash or other assets, any difference resulting from failure to realize its par value should be applied to reducing the amount of the credit balance in the Donations account. After all donated stock is disposed of, the adjusted balance in the Donations account represents net increase in asset values arising from donation of stock and therefore amount of surplus arising from this source. If original assets received in payment for stock issued have been carried at an inflated valuation on the books, this inflation may be eliminated as suggested above by writing it off against the Donations account before that account is transferred to Surplus. Surplus which originates in this way is true paid-in surplus, because it represents a contribution by the stockholders.

Repurchased Stock should be governed by same principles as donated stock. Since it should be carried at par a book surplus results equivalent to the amount of any discount on the purchase price. If repurchased stock is sold at a profit, Capital Surplus is increased by amount of the profit; if at a loss, Capital Surplus is decreased to that extent. The unearned increment is replaced by true surplus or reduction thereof according as stock is sold for more or less than its purchase price. This unearned increment should be termed **contingent profit on treasury stock.** If stock sells below repurchase price, this contingent profit is wiped out and amount of loss is a charge, first, to Capital Surplus and, secondly, to Earned Surplus. Contingent profit exists only if stock is repurchased below par. If stock is repurchased at a discount and authorized capital stock is reduced, the contingent profit becomes capital surplus. This may not be the case, if no reduction in authorized issue is made, since stock might be resold at a discount.

Surplus from Appreciation may result from a revaluation of fixed assets.

A definite line of distinction should be drawn between surplus available for dividends and surplus resulting from such revaluations. Such surplus should be reduced during remaining life of asset to whose revaluation it owes its existence. **Depreciation** of such assets should be separated into two parts, one applicable to original cost, the other to appreciated value. The former part is a charge to income, the latter to Surplus from Appreciation.

Illustration.—A building costs $200,000 and has an estimated life of 40 years. At end of 20 years it is appraised at $150,000, thus increasing the depreciated book valuation $50,000. This entry is as follows:

Building	$50,000	
Surplus from Appreciation		$50,000
To record increase in value, as per appraisal.		

Over remaining 20 years of building's life the newly appraised value of $150,000 must be charged off by an annual charge of $5,000 to income and of $2,500 to Surplus from Appreciation. The entry at end of each year is:

Depreciation	$5,000	
Surplus from Appreciation	2,500	
Reserve for Depreciation		$7,500

SURPLUS IN CONSOLIDATED BALANCE SHEET.—When balance sheets of affiliated companies are consolidated, investment accounts representing intercompany holdings of stock are eliminated and in their place appear the actual assets and liabilities of companies involved. When amounts thus substituted do not agree with purchase price of intercompany holdings of securities, the difference affects **consolidated surplus.** Thus, if in place of the investment account representing securities of affiliated companies held, net assets having a greater book value are brought into the balance sheet, Surplus account is increased by such excess of assets over investments. Likewise Surplus is decreased if net asset values brought into consolidated balance sheet are less than the investment account for which they are substituted. The change in Surplus thus resulting represents net profit or loss which is applicable to the investment and which has accumulated since it was purchased. Any difference between purchase price and book value of assets at date of their purchase should be covered by an adjustment of the **Consolidated Good-Will account.** (See section on "Consolidations.")

RESERVES.—When a part of surplus is set aside for a specific purpose, it becomes a **reserve.** To the word "reserve" it is customary to add a qualifying word indicating the purpose for which the reserve is intended. Reserves of surplus have developed as the result of a desire to show what part of surplus can safely be regarded as being properly available for dividends.

Operating Reserves.—The additions to operating reserves represent charges against Income; consequently they are not reserves of surplus. They show an expense or loss incurred to neglect which would be to overstate net income. They may be an approximation, as in case of depreciation reserves. They represent either a deduction from book value of an asset, as in case of reserves for bad debts and depreciation reserves, or they represent liabilities, as in case of reserves for taxes.

Non-Operating Reserves.—Non-operating reserves are reserves of surplus, representing profit set aside for a more or less definite purpose. Illustrations are sinking fund reserves and reserves for additions and betterments. Such reserves are established by means of an entry debiting Surplus and crediting the proper reserve account. Such entry does not reduce proprietorship but merely segregates part of surplus in a special account. It reserves profits

already realized for some purpose other than dividends. Usually non-operating reserves are established by vote of directors, but they may be the result of contractual obligations with creditors. An illustration of reserves of the contractual type are those providing for redemption of bond issues, details governing the establishment of the reserve, and possibly corresponding fund, being found in the trust deed or mortgage. With such exceptions accounted for, the board of directors has control of surplus disposition. When no contractual obligation exists regarding the integrity of reserves, the board of directors may reverse its policy and turn reserves of surplus already established back into general Surplus. The purposes for which these voluntary reserves are established are summarized as follows:

1. To provide a permanent increase in capital.
2. To provide against emergencies and contingencies.
3. To equalize dividend payments.

APPROPRIATIONS OF SURPLUS.—Integration of surplus on a simple scale is accomplished by separating surplus into two parts, viz., **undivided profits** and **surplus,** the idea being that that portion designated as surplus is to be retained in the business. Where, in case of a large surplus, money is borrowed on the basis of the credit standing which such surplus gives to the company, it may be desirable to take such steps as are necessary to protect such surplus against distribution as dividends. So far as legal rights are concerned, however, the directors are at liberty to make dividend payment from such surplus. In attempting to keep such surplus intact, the interests of the stockholders should not be neglected.

An appropriation of surplus should not be confused with a fund for cash. Merely because surplus has been appropriated in no way indicates that any reservation of a corresponding amount of cash has been made. Usually such reserved surplus exists in the form of increased assets of all kinds. Setting up cash funds to correspond to reservations of surplus is a different matter. As a rule it is not desirable to set up funds to represent non-operating reserves of surplus, because the money can be employed in the business more profitably than in form of securities of other concerns. When, however, it is considered desirable to establish a distinct fund, care should be exercised in purchasing securities for it, to see that they are readily marketable when money is needed.

ACCOUNTING PROCEDURE FOR RESERVES.—In the ledger all reserve accounts show credit balances, but it is not necessary that all reserves appear on the liability side of the balance sheet. Valuation reserves are quite properly a deduction from the book value of the assets to which they are complementary. Examples are reserves for bad debts and depreciation. Operating reserves which show liabilities, such as reserves for taxes, should appear on the credit side of the balance sheet.

Non-operating reserves, being appropriations of surplus, belong in the proprietorship or net worth group of accounts on the liability side of the balance sheet. From point of view of location in balance sheet, reserves are classified thus:

1. Deductions from assets (operating).
2. Accrued liabilities (operating), shown on liability side.
3. Appropriations of surplus (non-operating), shown on the liability side.

On this point Montgomery says:[4]

"The distinction lies in the purpose for which the account is created. If

[4] Auditing, Theory and Practice, Vol. I, p. 267.

the debit or offsetting entries are proper charges against income, then the accounts should be deducted from the assets to which they relate, or else they should be set up as liabilities and should never be grouped with the surplus account. On the other hand, if the accounts represent sums set aside after the net income of an enterprise is properly determined, to conserve its financial interests by reducing the surplus available for dividends, these sums in reality form part of the general surplus of the business. In preparing balance sheets, these latter accounts should be stated as a section of the surplus account."

The ultimate disposition of proprietorship and non-proprietorship reserves differs. The former are ultimately returned to surplus but operating reserves are not if their amounts are correct. This is illustrated below.

Illustration—Operating Reserve.—When an allowance for depreciation is made, a depreciation expense account is charged and a reserve for depreciation is credited. When ultimately the building is displaced, its original cost is charged against the depreciation reserve, and if the reserve has been set up for the correct amount, it will be closed out. Should the reserve prove to be too large or too small, it would be adjusted through Surplus.

Illustration—Non-Operating Reserve.—A reserve is to be set up to provide for the liquidation of a bond issue when it falls due. For this purpose $5,000 of surplus is annually transferred to a Sinking Fund Reserve account until $50,000 has been accumulated in it. The entry each year is:

Surplus	$5,000	
Reserve for Sinking Fund		$5,000

When the bond issue is paid off, Bond account is charged and Cash is credited. As yet the reserve, now amounting to $50,000, is unchanged. This should now be closed into Surplus, thus:

Reserve for Sinking Fund	$50,000	
Surplus		$50,000

The treatment of non-operating reserves should not be confused with the adjustment of operating reserves for excesses and deficiencies over the amount required to serve the intended purpose. Montgomery says that if there is no reasonable chance of reserve being restored to surplus, it is not true surplus reserve.

RESERVES FOR CONTINGENCIES.—Reserves for contingencies may be either operating or non-operating reserves. If the charge for which they are created is a proper deduction from the income of the year in which they are created, they are operating reserves; if not, they are surplus reserves. As a working rule the charge is against current income if there is definite tangible evidence that a liability is accruing, the expense of liquidating which is properly applicable to the current period. This evidence, however, must be something more than a vague feeling that something has been overlooked.[5]

Illustration—Reserve for Contingencies.—In a certain business there is danger of litigation over patented processes although no suits are at present pending. To provide against the possibility of loss on this score, the board of directors decide that it is desirable to reserve a part of surplus which would otherwise be available for dividends. This is done by means of a charge to Surplus and a credit to a Surplus Reserve account. If later a loss is incurred as the result of patent litigation, the cost is charged against this reserve. In any event such losses are proper charges to Surplus and the effect is the same

[5] R. H. Montgomery, Auditing, Theory and Practice, Vol. I, p. 270.

when they are charged against a reserve which was itself a charge against Surplus, as when charged direct to Surplus. The setting up of the reserve simply guarantees the retention of enough surplus to cover such losses. The effect is the same if the cost is charged direct to Surplus and the reserve is transferred back to Surplus as when it is charged to the reserve.

SURPLUS AS AFFECTED BY VALUATION POLICIES.—Over- or under-valuation of assets has an equivalent effect on surplus. The same effect results from the omission of assets or liabilities from the balance sheet, or from the intentional over- or under-statement of assets or liabilities. A frequent practice is the creation of **hidden reserves.** Those most commonly arising result from:[6]

1. Reducing the total value of the assets by
   (a) Charging additions or betterments to expense.
   (b) Charging assets of real value off the books against Profit and Loss or Surplus.
   (c) Writing down the book value of assets of real value beyond what is proper, either through the taking of excessive depreciation or by arbitrary write-offs.
2. Increasing the showing of liabilities improperly by
   (a) Entering fictitious liabilities.
   (b) Overstating actual liabilities.

Examples of 1 above are:

1. Charging additions to repairs.
2. Creating excessive allowances for bad debts.
3. Charging manufacturing cost to expense, thus reducing inventory values of goods in process and finished goods.

When hidden reserves are created intentionally, they usually result from the following motives:

1. To be conservative or to avoid any possibility of being accused of misrepresentation.
2. To lessen taxes by understatement of net worth or profit.
3. To keep stockholders in ignorance of true conditions, either:
   (a) Fraudulently, to induce some of them to sell their stock for less than it is really worth; or
   (b) With honest intent, that there may be a hidden surplus from which dividends at the same rates may be declared in years of lean profits.
4. To keep competitors in ignorance as to real worth of the business.

Overstating Surplus.—This may be done by overstating assets or understating debts, but is never justifiable. It may result from fraud, ignorance, or overoptimism. Failure to provide sufficiently large depreciation reserves leads to the same result, but high income taxes have checked this tendency. This applies both to fixed assets and to inventories. Balance sheets should not have to be discounted arbitrarily.

VALUATION.—Certain rules are laid down for valuing assets. For full discussion see section on "Valuation." Liabilities present a problem of inclusion, not of valuation. All liabilities must be shown in the balance sheet whether due or not.

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6 The Surplus of Corporation, by P. W. Pinkerton, in *Administration*, Feb. 1923.

Assets Valuation.—Various bases of valuation[7] of assets are:

1. Original cost.
2. Cost of reproduction.
3. Original cost less depreciation to date.
4. Market value.
5. Forced sale value.

Since these bases give widely different results, the amount of surplus depends on the base adopted, as well as on the care with which it is applied. So long as a business is prosperous, its assets should be valued on a going concern basis. In case it goes into the receiver's hands, the valuation should be conservative but still on a going concern basis. This basis should be **cost-less-depreciation** to date. If the receivership fails to rehabilitate the enterprise and the assets are sold at auction, the basis becomes forced sale value. The basis of valuation changes when the use to which a thing is put changes. Moreover, assets must be valued with reference to their own characteristics, so that the basis of valuation applicable to current assets is not the same as that applicable to fixed assets. Changes in market value of current assets are a much more important factor in valuation than they are in valuation of fixed assets.

Cost is sometimes difficult to determine. **Complicating factors** in case of large plant assets are: freight on machinery, installation costs, salaries and interest during construction, developmental costs, etc.; also later repairs, additions, betterments, etc.; also the handling of depreciation.

Cost at best is an approximation. There is a tendency to make certain **departures from the cost rule** in case of going concerns, owing to permanent increases in value occurring in many instances, which, if not adjusted on books, result in **hidden reserves.** Consequently in place of cost has been substituted **cost to reproduce.** This rule should be followed only when the increase in value is considerable, unquestionable, and permanent. As a rule such variations from cost should be made for balance sheet purposes only, original cost being reflected by the books.

Inventories are valued at "cost or market, whichever is lower," but frequently departures from this rule are permissible. Montgomery suggests the following bases to fit varying circumstances:[8]

1. Less than either cost or market.
2. Cost or market, whichever is lower.
3. Reproduction cost when that is higher than replacement cost.
4. Market when market is higher than cost.
5. Selling price.

Writing inventories down to a figure below cost is equivalent to the establishment of a Reserve for Inventory Fluctuations.

Appraisals of fixed assets become relatively more important as cost as a basis of valuation is abandoned in favor of cost to reproduce. When employed, the adjustment should not be made through Profit and Loss but direct to Capital Surplus.

When assets are written up, **depreciation** written off should be separated into two parts, the part applicable to original cost being a charge to income, and the part applicable to appreciation in value being a charge against the surplus set up at time of assets' revaluation.

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[7] For detailed discussion of the basis of valuation for rate purposes, see Saliers' Depreciation, Principles and Application, pp. 364–406.

[8] Auditing, Theory and Practice, Vol. I, p. 126.

SURPLUS AND NO-PAR STOCK.—At time of sale, no-par stock should be credited for sale price. Some accountants carry surplus arising from operations to the No-Par Stock account, but it is better to carry it to a separate surplus account. If no-par stock is repurchased at a price other than its original sale price, surplus is affected. If bought in excess of original sale price paid-in, surplus is reduced by such excess; if below original sale price, paid-in surplus is increased. If it was issued at different times and at varying prices, one of two procedures is possible. One is to take the average value of all stocks issued. The other is to compare price of reacquired stock with original selling price of the identical shares. Neither procedure has yet become the standard.

SURPLUS ADJUSTMENTS.—When errors made in former accounting periods are discovered, they should be adjusted through Surplus. If numerous, open a **Surplus Adjustment account.** After all corrections are made, carry balance of this account to Surplus. In stating current year's results, begin Surplus with balance of previous year, then bring in balance of Surplus Adjustment account as a debit or credit and bring down the balance as the **true balance from previous year;** then bring in results of current year. If corrections affecting profit and loss extend over two or more years, discriminate between errors affecting surplus permanently and those affecting profit in a given year but which are offset in the next year and so do not affect final amount of surplus.

If it is found that any **bad debts** were not taken into consideration, credit Accounts Receivable and charge Surplus, thus permanently reducing it, unless there is an adequate bad debts reserve, in which case it should be charged.

If **betterments** and **extensions** have been wrongly charged to Repairs, adjust by charging Plant account and crediting Surplus.

If, as the result of an error, the **inventory** is too large, charge Surplus and credit Inventory for the amount of the error. Since in the succeeding period the old inventory becomes a credit, an error in the inventory results in no permanent error in surplus. Consequently, if surplus is to be adjusted each year, the correcting entry made to adjust surplus must be reversed the next year. If only final amount of surplus is desired, no adjustment is required.

If adjustments are few in number and of small amount, they may be carried to current Profit and Loss to avoid the trouble of adjusting surplus.

APPROPRIATED SURPLUS.—Surplus is subject to control by the board of directors, except where their authority in this respect is limited by law, as in case of certain classes of financial corporations. Frequently powers of directors in this respect are limited by contracts, as where the deed of trust of a bond issue provides for establishment of sinking funds out of earnings. Otherwise the powers of the board of directors are practically unlimited, so that it is usually within their power to reverse any action previously taken to impound or reserve a portion of surplus. This possibility of a reversal of action previously taken is often overlooked by business men.

UNDIVIDED PROFITS.—Sometimes the subdivision of surplus into two parts, a Surplus account proper and an Undivided Profits account, is done to convey the idea that the "surplus" division is to be retained in the business, while the "undivided profits" division may be used for dividend payments. Care should be used in impounding surplus and thus preventing payment of dividends, because a discontinuance of dividend payments may impair the credit of the company or cause other evil results.

DISTRIBUTION OF SURPLUS.—In general, directors may declare dividends so long as they do not impair capital, i.e., reduce net worth to less than

par shares outstanding. In case of no-par shares, the question has not been finally settled by the courts. In some states impairment would probably result if net worth were reduced below amount for which stock was originally issued. In other states impairment would probably result only when net worth is reduced below a stated amount prescribed by law. This is $5 per share in New York.

Limitations upon dividend payments are not always definite. Seymour Walton says[9]:

> It is difficult to state concisely a rule for determining the legality of a dividend, partly because of the various sources of surplus, and partly because of the diversity of judicial decisions governing the matter. It is sometimes stated that dividends can be paid only from profits, but this is not an exact statement because the law allows a corporation to distribute in the form of dividends any premium which may have been paid to the company on its stock. It is true that the directors should not deceive the stockholders by allowing them to believe that the dividend was provided by profits, but this is a question of ethics and not of law.
>
> Nor is the statement correct that dividends can be paid only from surplus, which means that after the dividend has been paid there must be actual net assets equal to the capital stock. For instance, if the development or organization expense is still carried on the books as an asset, it is not imperative that it shall be written off before a dividend is paid, provided a reasonable portion of it is canceled and the course of the business justifies the carrying of the remainder as a deferred charge.

Surplus resulting from setting up on books of **appreciated values** should not be distributed as dividends. It should be earmarked to render it easily distinguishable.

The rule that dividends must not be declared unless net worth, exclusive of appreciation, will after the declaration equal or exceed capital stock, may be regarded as the one generally applicable in this country to corporations which have sustained losses by which capital has already been impaired. Capital impairment should be wiped out by earnings, assessments, or voluntary contributions, and net worth be brought back to more than par of capital stock, before dividends are proper. In England dividends may be paid in any period when profits are earned regardless of capital impairment.

In case of corporations exploiting natural resources, it is not necessary to retain all money invested by stockholders until all activities are completed. In the English case of *Lee* v. *Neuchatel Asphalt Co.*,[10] it was held that "if the company retains assets sufficient to pay its debts . . . . there is nothing whatever in the Act to prevent any excess of money obtained by working the property over the cost of working it from being divided amongst the stockholders." In general, American decisions are in accord with this, although some are not so broad.

Criminal liability attaches in some states to payment of dividends out of capital. Where criminal liability does not attach, the directors may make such distribution if willing to assume personal financial responsibility for return of the money in case the company goes into insolvency. Explanation should accompany such declaration to the effect that the dividend is not paid out of profits. Such dividends should be charged to **Advance Payments on Dividends Not Earned or Declared,** or similar account. This remains on the books as an asset until surplus sufficient to declare a legal dividend is accumulated, when these advances should be deducted from the dividend so declared.

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[9] Advanced Accounting, p. A 271.
[10] L. R. 41 Ch. D. 1 (1889).

Dividends may be classified as follows:

1. Dividends which reduce the net worth of the corporation:
   - Type 1. By reducing assets.
   - Type 2. By increasing liabilities.
2. Dividends which do not reduce net worth of the corporation:
   - Type 3. Stock dividends.

Any dividend not paid in the company's own stock reduces net worth, whether cash or scrip.

The Supreme Court of the United States, in *Towne* v. *Eisner*,[11] decided that stock dividends are not income and so are not taxable by the federal government.

DIVIDEND POLICIES.—Dividends may legally be paid whenever there is a surplus against which to charge them. Few corporations could exist following the policy of distributing the entire surplus in dividends, because few businesses can continue operations satisfactorily on a fixed amount of capital. Growth requires additional capital to carry accounts receivable, to handle increasing inventories, to enlarge plants. The most common way of securing additional capital is through earning profits and retention of these in the business.

Even if expansion is not desired, few businesses can distribute all surplus safely, because there are few whose profits are represented by cash as fast as earned. Most enterprises have to give credit, and much profit is necessarily tied up in accounts receivable. In determining whether a dividend should be paid, the cash situation as well as the mere existence of a surplus should be

Analysis of Surplus

Balance of Surplus, Dec. 31, 1922			$100,000
Adjustments Applicable to Prior Periods:			
Addition:			
Refund of Income Tax Overpaid		$ 1,000	
Deductions:			
Accounts Payable Not Entered	$200		
Items Wrongly Capitalized	400		
Total Deductions		600	
Net Increase			400
True Surplus, Dec. 31, 1922			$100,400
Extraordinary Profits this period		$17,000	
Net Operating Profit this period		43,000	
Total Additions			60,000
Amount Available for Appropriation			$160,400
Appropriations of Surplus:			
Reserve for Sinking Fund		$10,000	
Dividends Declared and Paid		20,000	
Total Appropriations			30,000
Surplus, June 30, 1923			$130,400

FORM 3. Analysis of Surplus

[11] 245 U. S. 418.

Carthage Cabinet Com

Balance Sheet—

ASSETS

CASH:			
Cash in Offices		$ 12,750.00	
Cash in Banks		94,675.91	
Total Cash			$ 107,425.91
NOTES AND ACCOUNTS RECEIVABLE:			
Accounts Receivable, Customers', Not Due	$ 637,982.26		
Accounts Receivable, Customers', Past Due	51,447.35		
Railroad and Insurance Claims	11,170.17		
Total Outside Receivables		$ 700,599.78	
Less: Allowance for Doubtful Receivables		44,728.12	
Total Outside Receivables, Good			655,871.66
INVENTORIES:			
Raw Material		$ 573,742.32	
Goods in Process		187,707.84	
Finished Goods		1,432,772.13	
Total Merchandise Inventories			2,194,222.29
U. S. LIBERTY LOAN BONDS			160,400.00
TOTAL QUICK ASSETS			$3,117,919.86
OFFICERS' AND EMPLOYERS' ACCOUNTS AND STOCK SUBSCRIPTIONS			114,740.24
TOTAL CURRENT ASSETS			$3,232,660.10
FIXED ASSETS:			
Land		$ 249,592.67	
Buildings	$ 580,910.21		
Less: Allowance for Depreciation	156,209.38		
Buildings, Net Value		424,700.83	
Office Furniture and Fixtures	$ 19,085.04		
Less: Allowance for Depreciation	9,782.15		
Office Furniture and Fixtures, Net Value		9,302.89	
Factory Fixtures	$ 197,627.76		
Less: Allowance for Depreciation	102,622.07		
Factory Fixtures, Net Value		95,005.69	
Machinery and Tools	$1,583,754.68		
Less: Allowance for Depreciation	538,632.60		
Machinery and Tools, Net Value		1,045,122.08	
Automobiles and Trucks	$ 55,182.79		
Less: Allowance for Depreciation	20,464.21		
Automobiles and Trucks, Net Value		34,718.58	
TOTAL FIXED ASSETS			$1,858,442.74
DEFERRED CHARGES:			
Supplies Inventory		$ 7,337.92	
Prepaid Insurance		21,904.95	
Prepaid Royalties		5,000.00	
Total Deferred Charges			34,242.87
GOOD-WILL, PATENTS AND TRADE-MARKS			300,000.00
TOTAL ASSETS			$5,425,345.71

FORM 4. Balance Sheet Showing

pany—Indianapolis

December 31, 1922

LIABILITIES AND NET WORTH

CURRENT LIABILITIES (UNSECURED):				
Notes to Banks			$ 180,000.00	
Accounts Payable, Trade			178,046.58	
Accounts Payable, Sundry			160,689.44	
Accrued Interest, Taxes, etc. (including Federal Income Tax)			74,495.65	
Total Current Liabilities (Unsecured)				$593,231.67
FIXED LIABILITIES:				
First Mortgage Bonds Outstanding, due 1935			$ 800,000.00	
Less: Sinking Funds in Hands of Trustees:				
Cash		$ 2,436.07		
Investments		349,600.00		
Total Sinking Funds			352,036.07	
Net Fixed Liabilities				447,963.93
TOTAL LIABILITIES				$1,041,195.60
NET WORTH:				
Preferred Stock, Authorized		$5,000,000.00		
Less: Unissued	$3,000,000.00			
In Treasury	1,000,000.00			
		4,000,000.00		
Outstanding		$1,000,000.00		
Plus: Subscribed		100,000.00		
Total Preferred Capital Stock			$1,100,000.00	
Common Stock of No-Par Value, 50,000 shares authorized, 20,000 shares outstanding			800,000.00	
Total Capital Stock			$1,900,000.00	
Surplus, Available for Dividends:				
Earned		$1,442,150.11		
Capital		140,000.00		
Total Surplus Available for Dividends			$1,582,150.11	
Surplus, Not Available for Dividends:				
Reserves:				
For Sinking Fund		$ 352,000.00		
For Contingencies		200,000.00		
For Expansion		150,000.00		
Total Reserves		$ 702,000.00		
From Revaluation of Good-Will, Patents, and Trade-Marks		200,000.00		
Total Surplus Not Available for Dividends			902,000.00	
NET WORTH				$4,384,150.11
TOTAL LIABILITIES AND NET WORTH				$5,425,345.71

Detailed Analysis of Surplus.

considered. While it is legal to pay dividends with borrowed money, provided there is a surplus, the courts are inclined to question the motives behind what is usually a display of poor business judgment. The writer knows of trials where the judge considered such payments from borrowed money a prima facie evidence of fraud.

It is ordinarily considered bad policy to pay dividends out of surplus unless profits have been earned in the preceding year. The exceptions to this rule are found in the cases of those corporations whose dividend policy has been conservative to such an extent that they have accumulated a surplus in excess of their needs to enable themselves to continue an uninterrupted dividend record through lean years.

SURPLUS ON THE BALANCE SHEET.—Handling of surplus in the balance sheet is based on the principle that surplus and capital stock together comprise net worth. It is usual to group them so as to show total net worth. If, instead of a surplus, there exists a deficit, this should be shown as a deduction from capital stock rather than among the assets.

A first requisite is to show surplus available for dividends as distinguished from that not so available.

Surplus arising from appreciation of asset values should be carefully separated from that arising from other sources, to eliminate the danger of its being used for dividend payments. To this should be added amounts reserved from dividends by action of the board of directors or by contracts requiring the establishment of reserves.

Another desirable classification is between earned and capital surplus. Accounting practice favors the theory that earned surplus be distributed as dividends before capital surplus is distributed.

However, for purposes of income tax, Congress has enacted that dividends "shall be deemed to have been made from the most recently accumulated undivided profits or surplus."[12] In *Harder* v. *Irwin*,[13] the United States District Court, Northern District of New York, holds this rule to apply "regardless of the language of the resolution or the intent of the company." This is subject to change, so does not necessarily determine accounting practice.

Non-operating reserves, that is, proprietorship or surplus reserves, being part of corporate surplus, should be so shown on the balance sheet that their total will be accumulated in total corporate net worth.

Operating reserves, being either deductions from asset values, or else representing true liabilities, should not be shown as part of net worth. Those termed **valuation reserves,** because they place a measure on specific asset values, are preferably shown as deductions from asset values.

Declared and unpaid dividends are an actual liability. Cumulative unpaid dividends should not be accrued on the balance sheet. They become a liability only when declared. For the information of those concerned they may be mentioned in a footnote to the balance sheet.

When declared, the amount of dividends should be removed from surplus to a liability account, Dividends Payable.

Analysis of surplus in the balance sheet may be somewhat as shown in Form 3, when it is desired to show changes in surplus during the last fiscal period. A form of balance sheet setting forth a detailed analysis of surplus is shown in Form 4.[14]

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[12] Revenue Act of 1916, as amended 1917.

[13] Reported in T. D. 3420, Bureau of Internal Revenue.

[14] P. W. Pinkerton, The Surplus of Corporations, in *Administration*, Apr. 1923, pp. 462–463.

SECTION 6

FINANCIAL STATEMENTS

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 6

FINANCIAL STATEMENTS

Fundamentals

FUNCTION OF FINANCIAL STATEMENTS.—Enterprises issue financial statements for certain purposes, chief among which are:

1. To meet the requirements of management.
2. To meet the requirements of investors.
3. To meet the requirements of governmental regulations.

REQUIREMENTS OF MANAGEMENT.—Management involves internal and external problems. Internal problems are those involving financial structure, handling of cash and current assets, and supervision of operating processes. External problems cover a concern's relationship with individuals and corporations. Usually **credit** is involved in external relationships, and the **credit structure** of a concern is continually under observation of those who enter into credit relationships with the company. These various processes of finance and operation require constant supervision. This supervision must be based on accurate information derived from experience and so standardized as to enable possible comparisons to be made between processes and procedures within a given concern and over a certain number of years, also between concerns sufficiently alike to make comparisons of results valid. This standardized information must be compiled in form of **reports** and **statements.** Of these statements, the most important are the **balance sheet** and **income statement.**

BUSINESS STATISTICS.—The **balance sheet** and **income statement** are forms of business statistics valuable chiefly for the relationships which they disclose. The abstract facts contained in these statements are in themselves of little value; they should be used to make comparisons and show relationships.

The **balance sheet** indicates the sources of capital used in a business and the manner in which it is invested. The **sources of capital** are shown on the right-hand side of the balance sheet, the liability side. The **investment of capital** is shown on the left-hand side of the balance sheet, the asset side. Capital is invested in assets in proportions which vary with the nature of the business. In some businesses proportion of total capital required in form of fixed assets is large; in others it is relatively small. Significant relationships exist between sources of capital and the invested form which it takes. Capital, in case of corporations, is secured chiefly from three sources: (1) stockholders, including both original contributions and accumulated earnings; (2) issuance of long-term obligations; (3) issuance of short-term obligations. The amount of capital received from each of these sources must bear a more or less definite relationship to the manner of its investment in the various asset forms. Capital invested in fixed assets should be derived from sale of long-term securities, stock or bonds. Returns

secured from sale of short-term securities should not be invested in fixed assets but be reserved for purchase of working assets, and a sufficient excess of working assets over current liabilities should be maintained to preserve a suitable **working capital ratio**; that is, sufficient working capital should be secured from sale of stock or long-term securities so that total working capital will exceed current liabilities by a sufficiently wide margin.

The **income statement** gives the history of operating results over a period based on data covering gross income, cost of service performed or commodities sold, and resultant effect on proprietorship. Total revenues must be first used to make good cost of service performed, including all expenses of both direct and indirect character. Any balance thereafter remaining represents increase in proprietorship to be carried to surplus. In a particular branch of industry all items reflected in the income statement bear more or less definite relationships to each other, so that **ratios** representing these relationships become bases for determination of policies and procedures. If sales are taken as 100%, then all costs and expenses must be in proper proportion thereto to realize a profit. The **form** of the income statement should be devised to facilitate comparison of important items. This necessitates logical order and proper classification. The important relationships found in the income statement, according to J. H. Bliss, are:

1. Costs to sales.
2. Gross profits to sales.
3. Expenses (in detail) to sales.
4. Operating results to sales.
5. Non-operating income and expenses to sales.
6. Surplus net profits to sales.

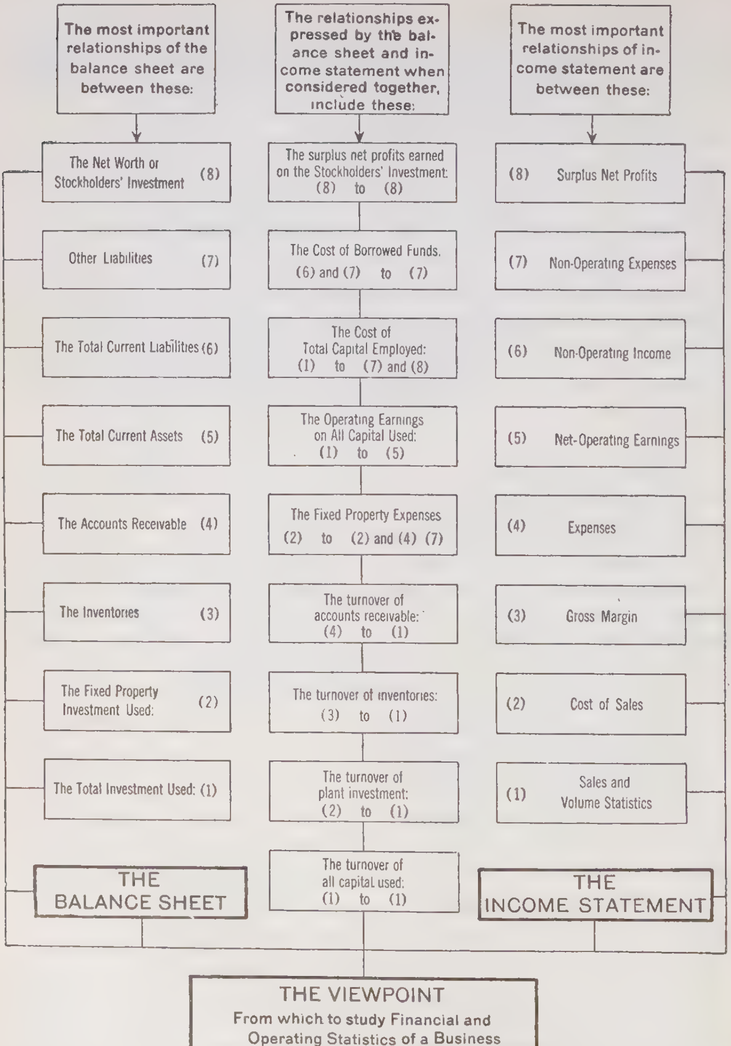
The balance sheet and income statement should also be **considered together** to obtain certain comparisons. Bliss lists the following **relationships** and **measurements** thus secured:

1. Ratio of surplus net profits to stockholders' investment.
2. Ratio of operating profits to total capital employed.
3. Turnover on total capital.
4. Turnover on plant investment.
5. Turnover of inventories.
6. Turnover of accounts receivable.
7. Cost of borrowed capital.
8. Cost of all capital employed.

Supporting statistics are necessary in connection with balance sheets and income statements, to permit the desired amount of detail in comparisons. These statements should be subjected to **statistical analysis**, the purpose of which is to reflect tendencies and conditions whose resultant combined effects are shown in the general financial statements. After statistical analysis has been applied, the detailed results secured should be considered in relation to the balance sheet or income statement to which they apply.

SIGNIFICANT RELATIONSHIPS IN FINANCIAL STATEMENTS.—Before attempting to analyze balance sheets and income statements, it is necessary to determine what **relationships represented in or between** these statements have significance. The accompanying chart, prepared by J. H. Bliss (Form 1), shows these relationships.

Balance sheets and income statements which conceal these important relationships are not properly constructed. They show lack of appreciation of these



Form 1. Chart showing Relationship between Significant Items in Financial Statements
(By J. H. Bliss)

relationships on the part of those who construct them. Before the form of these statements is determined upon in any business, attention should be given to the relationships that should be expressed in them. They should then be given such form and classification as make the desired comparisons easy. The accompanying chart compiled by Bliss (Form 2) indicates the comparisons to be made in financial statements. A condensed balance sheet is shown on the right; a condensed income statement on the left. Each item is numbered to facilitate reference. At the bottom of the chart, important measures and relationships are worked out, the items used to secure the results being indicated by numbers given in the statements.

Following are comments on more important relationships in financial statements.

1. **Relation of surplus net profits to net worth** is the measure of earning power from stockholders' point of view. In competitive businesses of a given type this tends to a fair average, bu varies as between types because of nature of risk involved. Other things being equal, the return is an index of financial and operating efficiency. The following table compiled by Bliss shows average percentage return on net worth of concerns engaged in various lines:

	Number of Years	Average per Year %
Showing large return on net worth:		
Explosive manufacturers	6	19.5
Glass manufacturers	6	17.1
Petroleum oil companies	7	16.4
Shipbuilding	7	13.8
Anthracite coal	8	13.1
Boot and shoe manufacturers	7	12.2
Showing small return on net worth:		
Vegetable oil manufacturers	7	2.2
Leather manufacturers	9	3.6
Fertilizer manufacturers	9	4.0
Paper manufacturers	9	5.0
Woolen and worsted goods	8	5.6
Slaughtering and meat-packing	9	6.2

2. **Percentage of operating profits to total capital used in operation** is the test of results viewed from the operating point of view. No regard is paid to source of capital. Operating profits are profits shown after meeting costs and expenses but before paying interest or other return on capital employed. The relation of surplus net profits to net worth is not a test of operating results, because it is affected by amount of capital secured from outside sources, bonds, notes, etc. Methods of financing concerns engaged in similar operations may differ widely. Consequently total capital employed must be considered. Yield on stockholders' investments is greater or less when part of capital is borrowed than when none is borrowed, accordingly as capital can be made to earn more or less than interest rate on borrowed funds. If balance sheet and income statement are properly organized, capital used in operations and net profits on operations will be clearly set forth.

3. **Relation of surplus net profits to sales** (volume of business) measures profit on basis of turnover. It is complementary to (1) above, which shows relation of surplus net profit to net worth. The rapidity of turnover necessary to produce a fair rate of return on investment depends upon margin of profit.

THE CONDENSED BALANCE SHEET

No.	ASSETS	Amount	%
1	CURRENT ASSETS:		
2	Cash	$ 50,000	5.0
3	Accounts and Notes Receivable	125,000	12.5
4	Inventories	200,000	20.0
5	Other Current Assets	25,000	2.5
6	Total Current Assets	$ 400,000	40.0
7	INVESTMENTS	$ 75,000	7.5
8	FIXED PROPERTY INVESTMENTS (Plant and Equipment)	400,000	40.0
9	INTANGIBLE FIXED ASSETS	100,000	10.0
10	DEFERRED CHARGES	25,000	2.5
11	Total Capital Employed	$1,000,000	100.0
	LIABILITIES AND CAPITAL		
12	CURRENT LIABILITIES:		
13	Accounts Payable	$ 25,000	2.5
14	Notes Payable	100,000	10.0
15	Other Current Liabilities	50,000	5.0
16	Total Current Liabilities	$ 175,000	17.5
17	LONG-TERM LIABILITIES (Bonds, etc.)	$ 200,000	20.0
18	RESERVES	$ 25,000	2.5
19	NET WORTH:		
20	Capital Stock, Preferred	$ 100,000	10.0
21	Capital Stock, Common	400,000	40.0
22	Surplus Appropriated	50,000	5.0
23	Surplus Account	50,000	5.0
24	Total Net Worth	$ 600,000	60.0
25	Total Liabilities and Capital	$1,000,000	100.0

THE CONDENSED INCOME STATEMENT

No.		Amount	%	Per Cwt.
26	VOLUME OF BUSINESS (lbs.)	10,000,000	.....	......
27	SALES	$1,000,000	100.0	$10.00
28	COST OF GOODS SOLD	700,000	70.0	7.00
29	GROSS EARNINGS	$ 300,000	30.0	$ 3.00
30	EXPENSES:			
	.... In appropriate detail.			
31	Total Expenses	210,000	21.0	2.10
32	OPERATING PROFIT	$ 90,000	9.0	$ .90
33	INTEREST COSTS	25,500	2.5	.25
34	MISCELLANEOUS LOSS AND GAIN	4,500	.5	.05
35	SURPLUS NET PROFITS	$ 60,000	6.0	$ .60
36	DIVIDENDS, PREFERRED	7,000		
37	BALANCE AFTER PREFERRED DIVIDENDS	$ 53,000		
38	COMMON DIVIDENDS	40,000		
39	SURPLUS ADJUSTMENTS	......		
40	NET CHANGE IN SURPLUS	$ 13,000		

Balance Sheet Relationships:

- A–Net Working Capital (6 − 16) $225,000.00
- B–Net Working Capital Ratio (6 ÷ 16) .... $ 2.28
- C–How Capital is invested—
  Proportion of each of items 1-10 to number 11. That is the proportion of total capital in each class of assets.
- D–Sources from which capital is secured—
  Proportion of each of items 13-24 to number 25. That is the proportion of capital secured from each of the various sources.
- E–Book Value of Common Stock $ 125.00
  The sum of numbers 21, 22, and 23 divided by number of shares outstanding. Assumed Preferred Stock has no interest in Surplus and Common Stock of $100.00 par value.

Measures of Earnings and Turnover:*

- F–% Earned on Net Worth (35 ÷ 24) 10%
- G–% Earned on Common Stock (37 ÷ 21) 13.2%
- H–Book Value of Common Stock (21, 22, 23) per share $125.00
- I–Cost of Borrowed Money [33 ÷ (14 + 17)] 8½%
- J–% Operating Profits on Total Capital (32 ÷ 11) 9.0%
- K–Turnover of All Capital (27 ÷ 11) $1.00
- L–Turnover on Fixed Property (27 ÷ 8) $2.50
- M–Turnover of Inventories (27 ÷ 4) $5.00
- N–Turnover of Accounts Receivable (27 ÷ 3) $8.00
- O–Lbs. Shipped per $1.00 of Plant Investment (26 ÷ 8) .... 25 lbs.
- P–Fixed Property Expenses % on Plant Investment (Expenses in 28 and 30 ÷ 8).

Income Statement Relationships:**

- Q–Average Prices (27 ÷ 26), $10.00 Per Cwt.
- R–Gross Earnings, 70% on Sales and $7.00 Per Cwt.
- S–Expenses, 21% on Sales and $2.10 Per Cwt.
- T–Operating Profits, 9% on Sales and $0.90 Per Cwt
- U–Interest Costs, 2.5% on Sales and $0.25 Per Cwt.
- V–Surplus Net Profits, 6% on Sales and $0.60 Per Cwt.

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*The turnovers are stated above as dollars of sales per one dollar of capital used. They may also be stated as the number of times per year.

**The Cost of Goods Sold item should be supported by appropriate cost statement with unit costs and ratios developed.

Form 2. Chart Summarizing Important Relationships to be Noted in Financial Statements
(From J. H. Bliss, "Financial and Operating Ratios in Management")

Thus where margin of profit is wider in one instance than another, to yield the same return, turnover need not be as rapid. Range of surplus net profits earned on sales is shown in the following table compiled by Bliss:

	Average % Earned on Sales
Industries with wide margin on sales:	
Lead production, average for 7 years	25.0
Petroleum oil production, average for 7 years	19.0
Bituminous coal, average for 7 years	18.6
Anthracite coal, average for 8 years	16.5
Sugar production, and refining average for 8 years	15.7
Industries with narrow margin on sales:	
Slaughtering and meat-packing, average for 9 years	1.3
Leather manufacturing, average for 9 years	4.0
Mail-order merchandising, average for 9 years	4.8
Rubber and tire manufacturing, average for 9 years	6.7

4. **Relation of operating profit to sales** is complementary to relation 2 above. This ratio shows profits earned on turnover, and relation 2 shows return earned on capital. Where a turnover of one per annum is secured, these ratios are equal. As a test of operating results this is superior to relation 3, because interest costs are not considered.

5. **Relation of gross earnings to sales** is a ratio highly characteristic of a given type of business, and consequently varying widely as between different lines. Gross earnings is found by deducting cost of goods sold from net sales. If a business is departmentized, each department will be found to have its own characteristic ratio.

6. **Relation of expenses to sales** is the best index to operating efficiency. These relations are expressed as so much per unit where quantity statistics are available, and as percentages when based on sales expressed in dollars. This ratio should be applied to the various subdivisions of expense for departments as well as for the entire business. Where quantity statistics are available, the expenses figured as dollars or cents per unit of commodity sold are effective measures of results secured. These should be supplemented by the percentage ratios.

7. **Relation of fixed property expenses to fixed property investment** is an index of economy and efficiency in the upkeep and management of fixed assets. The complementary ratio is that of fixed property expenses to sales. **Fixed property expenses** include all costs arising from ownership and use of fixed assets—taxes, upkeep, depreciation, etc. These are in the nature of fixed charges and do not vary extensively with variations in volume of business. There is danger of burdening a concern with a heavy fixed burden as the result of unwarranted extensions of plant or permanent equipment. The annual fixed charge imposed by such additions amounts to approximately 20% of their first cost, 9% representing cost of money, 5% depreciation, and 6% repairs, insurance, taxes, etc.

8. **Cost of borrowed capital** may be considerably different from the nominal rate paid on outstanding bonds. If these were issued at a premium or discount, true interest cost should be determined by means of a correct amortization schedule. Also expenses incidental to sale and retirement of bonds should be taken into consideration.

9. **Cost of total capital employed** should be carefully determined so that the

productivity with which it is managed can also be determined. Bliss gives the following plan of determining this cost:

(a) Determine full cost and expenses of borrowed money, making due allowance for amortization of premiums, etc.
(b) Determine fair competitive return on stockholders' total equity in the business which should be earned by operations.
(c) These together afford a measure of real cost of capital.

This cost will ordinarily amount to 9% or 10% per year on total capital employed.

10. **Turnover of inventories.** See section on "Inventories."

11. **Turnover of accounts receivable.** See Index.

12. **Turnover on fixed property investment** is ratio of sales to capital invested in plant and equipment. When fixed property investment enjoys a rapid turnover, overhead is reduced and the competitive position of the concern improved. The remedy for a slow turnover is either adjustment of property values or increase in sales. Reduction of investment of property is usually difficult to accomplish. It is better to keep careful watch of investments in plant in order to avoid all unnecessary expenditures of that type.

13. **Turnover of total assets** is ratio of sales to total capital employed. This is a valuable test of operations. It differs widely in different lines. As among similar enterprises, slow turnover of total assets is a competitive handicap.

14. **The working capital ratio** is the ratio of current assets to current liabilities. It is used to express a concern's status from a credit point of view, and the maintenance of a favorable ratio between current assets and current liabilities is necessary to a good credit position in the eyes of bankers and investors.

Analysis and Interpretation of Balance Sheets

FORMS OF BALANCE SHEETS.—Balance sheets are found in innumerable forms and arrangements. There is no satisfactory reason why English accountants place assets on the right side and liabilities on the left side, whereas American accountants use the reverse arrangement.

In the United States the **account form** of balance sheet has assets on the left and liabilities on the right. The **statement form** has assets above and liabilities below. R. H. Montgomery gives the following requisites of an ideal balance sheet:[1]

1. The assets, properly valued and grouped, and arranged in order of availability. This form is sanctioned by bankers and credit men.
2. The liabilities also properly grouped and arranged in the order in which they will, or should, be discharged.
3. If possible, excess of assets or liabilities should next be shown, so that net worth or capital may be apparent.
4. A statement showing to whom the excess belongs or from whom it is due.

These concepts are illustrated in Form 3.[2]

Among large **industrial corporations** the balance sheet shown in Form 4 is most popular.[3] Owing to the fact that this form presupposes the ability on the reader's part to discriminate between actual liabilities and surplus, Montgomery prefers the balance sheet shown in Form 5.[4]

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[1] Auditing, Theory and Practice, Vol. I, p. 367.
[2] Ibid, pp. 367, 368. [3] Ibid., p. 368. [4] Ibid., p. 369.

Assets			
Current Assets:			
Cash		$......	
Notes and Accounts Receivable		......	
Inventories		......	
Prepaid Insurance, etc		......	$......
Deferred Charges:			
Bond Discount, etc			......
Plant Assets:			
Real Estate		$......	
Machinery, Fixtures, etc		......	......
Good-Will, Patents, etc			......
			$......
Liabilities			
Notes Payable	$......		
Accounts Payable	......		
Accrued Wages	......		
Reserves (not deductible from assets)	......	$......	
Bonded Debt	......	......	......
Excess of Assets (or Net Worth)			
Capital Stock		$......	
Surplus (or Deficit)		......	$......

Form 3. Outline of Ideal Balance Sheet

Assets		
Plant Assets:		
(Including Real Estate, Machinery, Patents, Good-Will, etc.)		$....
Deferred Charges to Operations:		
Insurance, Interest, etc., Prepaid		....
Current Assets		
Inventories	$....	
Accounts and Notes Rec	....	
Cash	....	....
		$....

Liabilities		
Capital Stock		$....
Bonded Debt		....
Current Liabilities:		
Notes Payable	$....	
Accounts Payable	....	
Accrued Wages, etc	....	....
Reserves		....
Surplus		....
		$....
		$....

Form 4. Form of Industrial Balance Sheet

American Manufacturing Company, Incorporated

Balance Sheet, December 31, 19—

ASSETS

CURRENT ASSETS:		
Cash		$ 100,000
U. S. Government Bonds (insert basis of valuation)		300,000
Certificates of Deposit		200,000
Accounts Receivable, net of Reserves		350,000
Notes Receivable, net of Reserves		90,000
Inventories, at or below cost:		
Raw Materials	$110,000	
Merchandise, finished and in process	230,000	340,000
Prepaid Insurance, Interest, and other items paid in advance		20,000
Miscellaneous Supplies		10,000
		$1,410,000
ADVANCES TO SUBSIDIARY AND AFFILIATED COMPANIES (when less than 50% ownership)		210,000
INVESTMENTS, OTHER THAN U. S. GOVERNMENT BONDS (insert basis of valuation)		400,000
PLANT (net of depreciation):		
Land	$100,000	
Buildings	205,000	
Machinery and Equipment	340,000	
Furniture and Fixtures	20,000	
	$665,000	
Less: Reserves	95,000	570,000
PATENTS		145,000
GOOD-WILL		700,000
		$3,435,000

LIABILITIES

CURRENT LIABILITIES:		
Notes Payable, banks and bankers		$ 170,000
Accounts Payable, trade creditors		180,000
Accrued Liabilities:		
Wages, Commissions, etc.	$ 20,000	
Interest, Royalties, Taxes, etc.	50,000	70,000
Reserves for Taxes:		
Federal Taxes	$210,000	
State and other Taxes	30,000	240,000
		$ 660,000
BONDED INDEBTEDNESS:		
First Mortgage 7% Bonds, due Jan. 1, 19—		500,000
		$1,160,000
CAPITAL		
CAPITAL STOCK:		
Preferred, 7% cumulative (Authorized $1,000,000)	$ 880,000	
Common	1,000,000	
	$1,880,000	
SURPLUS	395,000	2,275,000
		$3,435,000

We have examined the accounts of the American Manufacturing Company, Incorporated, and (subject to the valuation of Plant, Patents, and Good-Will being correct) we certify that, in our opinion, the above Balance Sheet correctly sets forth the financial position of the Company as of December 31, 19—.
New York, January 25, 19—.

FORM 5. Preferable Form of Industrial Balance Sheet.

Federal Reserve Board

ASSETS

Cash:
1a. Cash on hand—currency and coin.................. ....
1b. Cash in bank.... ....

Notes and accounts receivable:
3. Notes receivable of customers on hand (not past due) ....
5. Notes receivable discounted or sold with indorsement or guaranty.......................... ....
7. Accounts receivable, customers (not past due)....... ....
9. Notes receivable, customers, past due (cash value, \$....).. ....
11. Accounts receivable customers, past due (cash value, \$....) ....

Less:
13. Provisions for bad debts............. ....
15. Provisions for discounts, freights, allowances, etc..................... ....

Inventories:
17. Raw material on hand............................ ....
19. Goods in process.. ....
21. Uncompleted contracts................. ....
Less payments on account thereof......... ....

23. Finished goods on hand......................... ....

Other quick assets (describe fully):
....
....

Total quick assets (excluding all investments)................................ ....

Securities:
25. Securities readily marketable and salable without impairing the business.............................. ....
27. Notes given by officers, stockholders, or employees.. ....
29. Accounts due from officers, stockholders, or employees ....

Total current assets.. ....

Fixed assets:
31. Land used for plant............................. ....
33. Buildings used for plant........................ ....
35. Machinery....................................... ....
37. Tools and plant equipment....................... ....
39. Patterns and drawings........................... ....
41. Office furniture and fixtures.................... ....
43. Other fixed assets, if any (describe fully)............ ....
....

....

Less:
45. Reserves for depreciation.......................... ....

Total fixed assets.. ....

Deferred charges:
47. Prepaid expenses, interest, insurance, taxes, etc................. ....
Other assets (49).. ....

Total assets.. ....

FORM 6. Federal Reserve Board

Form of Balance Sheet

LIABILITIES

Bills, notes, and accounts payable:		
Unsecured bills and notes—		
2. Acceptances made for merchandise or raw material purchased	....	
4. Notes given for merchandise or raw material purchased	....	
6. Notes given to banks for money borrowed	....	
8. Notes sold through brokers	....	
10. Notes given for machinery, additions to plant, etc.	....	
12. Notes due to stockholders, officers, or employees	....	....
Unsecured accounts—		
14. Accounts payable for purchase (not yet due)	....	
16. Accounts payable for purchases (past due)	....	
18. Accounts payable to stockholders, officers, or employees	....	....
Secured liabilities—		
20a. Notes receivable discounted or sold with indorsement or guaranty (contra)	....	
20b. Customers' accounts discounted or assigned (contra)	....	
20c. Obligations secured by liens on inventories	....	
20d. Obligations secured by securities deposited as collateral	....	....
22. Accrued liabilities (interest, taxes, wages, etc.)	....	....
Other current liabilities (describe fully):		
....	....	
....	....	....
Total current liabilities	....	....
Fixed liabilities:		
24. Mortgage on plant (due date........)	....	
26. Mortgage on other real estate (due date........)	....	
28. Chattel mortgage on machinery or equipment (due date........)	....	
30. Bonded debt (due date........)	....	....
32. Cther fixed liabilities (described fully):		
....	....	
....	....	....
Total liabilities	....	....
Net worth:		
34. If a corporation—		
(*a*) Preferred stock (less stock in treasury)	....	
(*b*) Common stock (less stock in treasury)	....	
(*c*) Surplus and undivided profits	....	
	....	
Less:		
(*d*) Book value of good-will		
(*e*) Deficit	....	....
36. If an individual or partnership—		
(*a*) Capital	....	
(*b*) Undistributed profits or deficit	....	....
Total		....

Form of Balance Sheet.

In balance sheets in which fixed assets come first, it is customary to place capital stock first among the liabilities, and surplus last. Consequently, the relation of fixed assets to stockholders' capital is more easily noted in the above form which places capital stock and surplus together. This is an important feature because surplus is sometimes a very large part of total invested capital. Any form of balance sheet is suggestive in the sense that it may require modification to meet requirements of individual enterprises. In any event, the **relationship between groups** requires emphasis more than does their mere **arrangement.** Fixed assets should be placed first or last according as important relationships are brought out by the arrangement adopted.

BALANCE SHEET PROPOSED BY FEDERAL RESERVE BOARD.—The Federal Reserve Board, in a pamphlet on "Uniform Accounting," proposes the form of balance sheet shown in Form 6.

For the balance sheet of the United States Steel Corporation, see Section 31, Form 36.

LACK OF UNIFORMITY IN BALANCE SHEETS.—Lack of uniformity extends to both **form** and **substance**; that is, not only are items arranged differently, but the items themselves differ. Sometimes the same title is used in a more comprehensive sense in one balance sheet than in another without the difference in use appearing on the face of either balance sheet. The nature of the business requires some differentiation in accounts which is necessarily reflected in the balance sheet. The balance sheet of a department store must differ in certain respects from that of a mining company, and the balance sheet of a mining company must differ from that of a manufacturing concern. The size of the business is a factor to be considered. Balance sheets of incorporated enterprises differ from those of unincorporated enterprises in method of showing proprietorship. The balance sheet of a holding company differs from that of an operating company.

DATE OF BALANCE SHEET.—This is an important factor in balance sheet interpretation. A balance sheet dated Dec. 31 may not be representative of conditions as they existed 3 months earlier, or as they will exist 3 months later. There is a growing tendency to make calendar and fiscal years coincide. Sometimes an attempt is made to date the balance sheet when conditions are most favorable.

BALANCE SHEET AND BUSINESS CYCLE.—The point in the business cycle at which a balance sheet is dated is a factor to be considered in its interpretation. Changing business conditions are constantly altering the status of many asset and liability accounts, especially current assets and liabilities. These factors may change the status of an enterprise from a condition of solvency to one of insolvency in a comparatively brief period.

VARYING DEPENDABILITY OF FIGURES.—Especially in industrial concerns, there is likely to be a variation in the **substance** of the accounts, i.e., in the reliability of the figures. There are several reasons for this, as follows:

1. The final figures may be secured in various ways. If a professional accountant audits the books, he may require changes which would not be made were no independent audit required. Accountants themselves differ in their opinions regarding treatment of many items.

2. The form and content of the balance sheet are sometimes varied to answer certain purposes, as to reduce tax liability or to make a more favorable showing for credit purposes.

3. The age of the balance sheet is a factor. If considerable time has

intervened since the date of the last balance sheet, it should be discounted accordingly.

4. There is a large element of judgment in every balance sheet; consequently balance sheets are not infallible even when drawn up with best intentions.

5. The tendency of business men to be optimistic concerning their own businesses is likely to be reflected in balance sheets. They overvalue assets and underestimate or neglect contingent liabilities.

ANALYSIS OF ASSETS.—The analysis of assets is a problem in functional segregation and the application of principles of valuation. The principles of valuation are discussed in detail in section on "Valuation," and are considered here only as they are necessary to the process of interpretation of financial statements.

Assets will be considered under the following titles:

Fixed Assets:
1. Real Estate
2. Leaseholds
3. Mineral and Timber Lands
4. Equipment and Machinery
5. Furniture and Fixtures
6. Pattern, Drawings, etc.

Intangible Assets:

7. Good-Will
8. Patents
9. Trade-Marks
10. Copyrights

Current Assets:

11. Cash
12. Investments
    (a) Temporary
    (b) Permanent
13. Notes Receivable
14. Accounts Receivable
15. Inventories

Deferred Assets:

16. Organization Expenses
17. Discount on Stocks and Bonds
18. Other Items

1. **REAL ESTATE.**—This item includes land and improvements thereon; also buildings and leaseholds. Legally land and buildings are one, but the accountant must consider them separately because of the depreciation factor. A careful distinction should be made between land used in the business and land held as an investment or for purposes of future growth. The investment in the former should be included in figuring turnover of invested capital, but the latter should be omitted because it is not employed to aid operations.

Cost of land properly includes expenses incidental to its acquisition and preparation for use—title search, registration fees, cost of recording and conveyancing, taxes accrued to date of transfer of title, etc. It is best to keep **improvement costs** separate from original cost of land. Among improvement costs are those incurred for drainage facilities, filling in, cutting down embankments, etc. The same general principles apply in case of **land bought for investment,** but it is ordinarily desirable in this case to add carrying charges to the investment. Set up a reserve out of profits equal to these capitalized carrying costs to cover possible loss of this portion of the investment in case of sale of the land.

Land held by realtors for development and sale is **stock-in-trade.** All development costs and carrying charges should be capitalized. In real estate developments, costs are kept by **plots.** Each plot is subdivided into **lots,** the cost of each being found by dividing the cost of the plot by the number of lots in it. This procedure is necessary to determine profit or loss on each lot sold. To determine true profit on such developments, it is necessary to capitalize all running expenses, such as interest and taxes, on each lot. To guard against failure of realizing such carrying costs, a reserve should be created. Whenever

a lot is sold, the part of the reserve applicable to it should be adjusted, such portion thereof as is realized in the sale price being carried to surplus.

Valuation of buildings is determined in the first instance by their purchase price or cost of construction. If constructed under contract, the contract price is the determining factor. If a concern does its own construction work, it should charge a fair proportion of the time of its administrative staff to construction; also cost of drawings and architect's fees, as well as all labor and material costs. Interest on borrowed money during construction period should also be capitalized, also insurance costs of all kinds applicable to the construction period.

2. VALUE OF LEASEHOLDS.—This depends directly upon the life of the lease. Ordinarily, improvements on leased land become the property of lessor on expiration of the lease; therefore all costs should be amortized during life of the lease. In **valuing leaseholds** it is necessary to deduct annual costs from annual income. The remainder is an **annuity** for the number of years the lease runs. Its present worth can be found by finding present worth of an annuity of $1 for the given number of years, and multiplying same by the amount of the annuity. If any sum is recoverable from lessor at expiration of lease, as is sometimes agreed upon in case of extraordinary improvements made by tenant, its present worth can be found by use of compound interest tables. This, added to present worth of the annuity, gives present worth of leasehold.

3. MINERAL AND TIMBER LANDS.—These items are oftentimes given valuations in balance sheets which are mere approximations, because of the difficulty of determining what part of proceeds from sales is a return of capital and what is profit. Among **mining companies** it is customary to pay in dividends all amounts realized after current expenses have been met. In case of bond issues, however, it is customary to make provision in the **deed of trust** for their redemption by requiring the creation of a sinking fund out of a part of the returns realized on sales. The chief objection to setting up a reserve to cover mineral depletion is that it requires the tying up of large sums in rather unproductive investments. As a consequence, capital is being constantly paid out in form of dividends, and, unless frequent adjustments are made in the investment accounts, discrepancies arise between book values and actual values. Where sinking funds are created, in case of wasting assets, it is accomplished by setting aside a percentage of sales, not on the actuarial basis.

In case of **timber lands,** value of the assets depends upon whether or not systematic **reforestation** is practiced and whether proper reservations are made for fire hazard. Increases in value from year to year due to natural growth are a factor.

Depreciation and appreciation of land values should not usually be reflected by adjustments in the accounts until actually realized by some form of **conversion.** There is no objection, however, to setting up a **reserve** for depreciation of land values where there is danger that shifting of industrial activities may cause material declines in land values.

4. EQUIPMENT AND MACHINERY.—Under **equipment** are included expenditures for heating plant, ventilating system, engines, boilers, dynamos, and water connections, including cost of installation. Equipment is classifiable on various bases. Ordinarily the classification should be into classes of approximately **equal lives** to facilitate calculation of depreciation. Other possible bases are **kind** and **manufacturing units.** In a classification on basis of kind, there would be included within a given group all parts of equipment pertaining

to a given function. In a classification on basis of manufacturing units, all property would be classified in the ledger on basis of operating units or departments. In any event, greater accuracy is secured in the general accounts and consequently in the balance sheet when detailed subsidiary records are kept.

For **machinery and fixed tools** a subsidiary record should be kept for details to insure the accuracy of the total found in the general ledger. Small tools having a comparatively short life should ordinarily be charged direct to operating expense.

5. **FURNITURE AND FIXTURES.**—This includes movable partitions, lighting fixtures, all kinds of furniture, calculating machines, etc. **One plan** of handling this item in the accounts is to capitalize the cost of a complete outfit, then charge all repairs and replacements to Profit and Loss. **Another plan** is to capitalize new acquisitions and systematically write off depreciation. This item should be written down rapidly.

6. **PATTERNS, DRAWINGS, ETC.**—In judging these items in a balance sheet, the most important consideration is the adequacy of the depreciation reserves. These depreciate very rapidly, especially where made to meet a special demand.

7. **GOOD-WILL.**—This item is one of the most difficult items to evaluate accurately. It is, consequently, the one most likely to be inflated. For a consideration of all factors entering into the determination of good-will valuation, see section on "Good-Will." Good-Will may be permanent or ephemeral, depending on its origin and character. It may or may not be transferable. Where it is dependent on the policy pursued by the management, it may be expected to persist so long as the policy which gave rise to it is pursued. Where it is dependent on patents, it does not necessarily follow that its value will terminate with the expiration of the patent, for the reason that the concern owning the patent is given an opportunity to establish a monopoly of the market.

Earning power should always be considered in relation to good-will; naturally, if this does not provide more than a fair return on tangible invested capital, there is little justification for inclusion of good-will among the assets. In considering earning power, eliminate any income resulting from unusual transactions which are in no way connected with the regular run of business. Sometimes large earnings appear as the result of inadequate depreciation charges.

Ordinarily good-will should appear on the balance sheet as the result of purchase, but there may be other circumstances which justify its inclusion, such, for example, as the admission of a partner.

Frequently good-will is brought upon the books at time of reorganization, and, although paid for by issue of securities, it represents merely the prospect of future profits. Stock is issued in excess of the value of physical assets, the difference being charged to Good-Will.

8. **PATENTS.**—In the United States the life of patents is 17 years, renewal being made only by special act of Congress. In interpreting a balance sheet, see that this item is set out separately and reduced in amount in proportion to the part of its life expired. Original value should be cost, whether purchase price or developmental expenditures.

9. **TRADE-MARKS.**—A trade-mark is a label or design protected by governmental grant. The life is 30 years, renewable for an equal period. Cost is nominal unless the trade-mark is purchased. Cost should be amortized over the legal life of the trade-mark.

10. COPYRIGHTS.—A copyright is the exclusive right to publish and sell literary productions. Its legal life is 28 years from date recorded. The renewal period is also 28 years. Usually the value of a copyright expires before its legal life ends. The cost is significant only when purchased from a former owner. In any case the cost should be amortized rapidly.

11. CASH.—This item consists of cash on hand and cash in bank subject to immediate withdrawal. I O U's should be excluded. Where cash is held in bank subject to withdrawal only upon several days' notice, it should be shown separately in the balance sheet. **Overdrafts** should be shown as current liabilities. Proceeds from sale of capital stock usually should be shown separately because they cannot as a rule be used to pay ordinary current liabilities, but are presumably being retained to make extensions or to refund long-term debts. Sometimes capital stock is sold to provide working capital, in which case this segregation is unnecessary.

12. INVESTMENTS.—Investments are **temporary** and **permanent.** Temporary investments are usually made to secure a return on cash held in excess of present requirements. Securities purchased for this purpose should be such as can be readily sold when additional requirements for cash arise. **Short-term notes** are of this type. Permanent investments are made either to control other companies or to establish sinking or other funds. Greendlinger classifies permanent investments thus:[5]

1. Investments in stocks and bonds of parent companies.
2. Investments in stocks and bonds of subsidiary companies.
3. Investments in stocks and bonds of allied companies.
4. Investments in stocks and bonds of outside companies.

Investments may be **pledged** or **unpledged.** All pledged investments should be so designated in the balance sheet.

A careful distinction should be made between investments in bonds and investments in stocks, because if bonds are bought at a discount or premium, true yield differs from nominal yield, and to secure the correct valuation it is necessary to amortize the premium or discount scientifically.

Attention should be given to the quality of securities invested in.

13. NOTES RECEIVABLE.—Notes and acceptances receivable from trade creditors arise out of business transactions. They should be separated from those arising out of accommodation extended to the company's officers or others. These latter are not usually regarded as highly as notes arising out of business transactions, because there is no certainty that they will be liquidated in due course of events. Notes assigned or pledged as collateral should be shown separately in the balance sheet. If notes receivable have more than one year to run, they should be regarded as investments, not as current assets. Assignment is not necessarily an indication of bad credit standing.

14. ACCOUNTS RECEIVABLE.—These may be classified as good, doubtful, and bad. **Good accounts** are those not yet due and which, it is anticipated, will be paid on time. **Doubtful accounts** are either those of debtors of questionable credit, or those which are overdue and concerning the ultimate payment of which there is doubt. **Bad accounts** are those which remain unpaid after ordinary means of collection have been resorted to. Terms of credit vary in different sections and businesses. General financial conditions are a factor.

[5] Financial and Business Statements, pp. 141–142.

In case of accounts receivable owing from debtors in bankruptcy, the account should be regarded as lost only after the bankrupt's discharge, because dividends may be received at any time previous to such discharge.

Accounts receivable other than those owing from trade debtors should be shown separately.

Suitable **reserves for bad and doubtful debts** should be set up based on a percentage of sales such as experience shows to be sufficient. This is a valuation reserve and preferably should be deducted from the accounts receivable account in the balance sheet.

15. INVENTORIES.—This includes merchandise in case of traders, and, in case of manufacturers, raw material, goods in process, and finished goods. Inventories of supplies are sometimes found; also various prepaid expenses are sometimes included in inventories. For methods of valuation, etc., see section on "Inventories." In case merchandise is pledged as **collateral for loans,** it should be set out separately in the balance sheet, or explanation made in a footnote or parenthetical reference.

In interpreting a balance sheet, the inventory should receive detailed consideration. Any marked increase in inventory values should be justified by sales prospects. In case of manufacturers, the value of the inventory should be considered with reference to length of time required in the manufacturing process and total annual sales.

16. ORGANIZATION EXPENSES.—These include promotion and legal expenses, incorporation fees, and other items incident to the starting of a new enterprise. These items should be written off over a period of years, which may vary from 3 to 5 and in some cases 10.

17. DISCOUNT ON STOCKS AND BONDS.—Capital stock cannot be issued at a discount in most states. If permissible, the discount should be charged to a special account and be treated as a deferred charge. Ordinarily this should be written off against Surplus before dividends are paid, because stock issued at a discount is equivalent to partly paid stock.

In case of bonds issued at a discount, the discount is an adjustment of interest and should be amortized over the life of the bonds. The account should be treated as a deferred asset, representing cost of financing. The discount should not be capitalized by being charged to the asset for the purchase of which the bonds were issued, except such portion as is applicable to the construction period. For principles governing amortization of discount, see section on "Mathematics." Prosperous concerns sometimes charge the whole amount of discount against Surplus, which, although conservative, is not the best practice.

18. OTHER ITEMS.—Among deferred assets may be included costs of large advertising campaigns, and prepayments of rent, taxes, etc. If advertising is capitalized, it should be written off over a comparatively short period. Its amount should be clearly set forth in the balance sheet.

ANALYSIS OF LIABILITIES.—Valuation is not of much significance as applied to liabilities. The problem is chiefly one of classification and of inclusion or exclusion. Strictly speaking, **capital stock** and **surplus** are not a liability, but must be considered along with the liabilities in interpreting the balance sheet. Liabilities are **fixed** or **current.** It is customary to regard liabilities as fixed if more than one year intervenes before they fall due, but this distinction is arbitrary. **Bonded indebtedness** is evidenced by bond issues, of which there are sometimes several. If a careful study is being made of a balance sheet, copies or abstracts of the trust deeds giving details of the issues should be secured.

Important considerations are: security, interest rate, and maturity. The full amount of bonds authorized should be set forth in the balance sheet, the unissued portion being shown as a deduction from bonds authorized. All pledges of property under bond issues should be investigated if not clearly set forth in the balance sheet. Owned securities pledged as collateral, if not clearly set forth, should be investigated. In some corporation reports these facts are set forth in detail in schedules attached to the balance sheet.

Mortgages are in some respects similar to bonds. They amount to a transfer of title as a guaranty of payment.

Notes payable usually have less than a year to run, and so are current liabilities. **Acceptances payable** are the equivalent of notes payable and may be included under that caption.

Accounts payable represent debts on open account, owing to trade creditors. Frequently these form a relatively large proportion of total liabilities. They should be considered with special reference to assets available for their liquidation.

Taxes accrued should include the amount of income tax estimated to be accrued to date of balance sheet; or this may be taken care of by a separate reserve.

Dividends become a liability only after formally declared and published by the board of directors. Unpaid dividends accumulated on preferred stock but not yet declared are not liabilities. This amount should be indicated in a footnote.

Deferred liabilities (sometimes called "deferred credits to income") are items received but not to be regarded as income until a later date.

Contingent liabilities are those which become definite liabilities in the future only in case of occurrences which may or may not transpire, as, contingent liability on notes receivable discounted, and on securities of other companies guaranteed as to principal or interest, or both.

Analysis and Interpretation of Income Statements

FORMS OF INCOME STATEMENTS.—The narrative form is most frequently used. In it gross sales or earnings appear first. From these the various deductions are made, each one being a step nearer to net profit. In the **account form,** gross sales or earnings appear on the credit side and the various deductions on the debit side. It is more difficult to interpret and is used but little in published reports. Form 7 shows the income statement recommended by the Federal Reserve Board. Form 8 was submitted to the St. Louis Congress of Accountants, in 1904, by A. Lowes Dickinson.

TERMINOLOGY IN INCOME STATEMENTS.—There is great variation in terminology in published statements. **Profits, revenue, earnings,** and **income** are used synonymously sometimes. **Net profits** is applied almost always after depreciation is deducted. **Net earnings** is sometimes used before deducting depreciation. Consequently as between concerns these two items may not be comparable. Montgomery recommends the adoption of the terms **income statement, gross income,** and **net income** to the exclusion of others.[6]

Gross income means accruals from all sources, profits derived from sale of capital assets, and excess of previously created reserves over ascertained needs for such reserves.[7] It should be divided into three parts, viz.:

[6] Auditing, Theory and Practice, Vol. I, p. 298.
[7] *Ibid.*, p. 299.

Comparative Statement of Profit and Loss for Three Years ending..............19 .

	Year ending—		
	19—	19—	19—
Gross sales..................................	$........	$........	$........
Less outward freight, allowances, and returns.....	....	....	....
Net sales..................................	....	....	....
Inventory beginning of year....................	....	....	....
Purchases, net..................................	....	....	....
	....	....	....
Less inventory end of year.	....	....	....
Cost of sales	....	....	....
Gross profit on sales........................	....	....	....
Selling expenses (itemized to correspond with ledger accounts kept)................	....	....	....
Total selling expense........................	....	....	....
General expenses (itemized to correspond with ledger accounts kept)........................	....	....	....
Total general expense..................	....	....	....
Administrative expenses (itemized to correspond with ledger accounts kept)..................	....	....	....
Total administrative expense..............	....	....	....
Total expenses..........	....	....	....
Net profit on sales........................	....	....	....
Other income:			
Income from investments....................	....	....	....
Interest on notes receivable, etc..............	....	....	....
Gross income...	....	....	....
Deductions from income:			
Interest on bonded debt....................	....	....	....
Interest on notes payable....................	....	....	....
Total deductions........................	....	....	....
Net income—profit and loss....	....	....	....
Add special credits to profit and loss............	....	....	....
Deduct special charges to profit and loss.........	....	....	....
Profit and loss for period..................	....	....	....
Surplus beginning of period......................	....	....	....
	....	....	....
Dividends paid................................	....	....	....
	....	....	....
Surplus ending of period..................	....	....	....
	....	....	....

FORM 7. Form of Income Statement recommended by Federal Reserve Board

1. Current gross income, or operating income. This includes gross sales less returns, discounts, and allowances. It is sometimes called "primary" income.
2. Gross income realized or accrued from other sources, as, profits from sale of capital assets, interest, and dividends. This is called "non-operating" or "secondary" income.
3. Unrealized income arising from undelivered sales, etc.

Gross sales means total sales of goods or services without deduction for returns, allowances, etc. Sales on approval and consignments-out should be excluded. They are a part of inventory. Neither should prepaid charges

Gross Earnings (whether sales of products, transportation earnings, professional earnings, etc.)		$.........
Deduct—Cost of Manufacture or Operation:		
(a) Manufacture (for a manufacturing concern):		
Labor	$.........	
Material	....	
General Manufacturing Expenses	....	
(b) Cost of Operation (for concerns not manufacturing):		
(Under suitable headings according to the nature of the business)	....	....
Gross Profits		$.........
Other Earnings		....
		$.........
Deduct:		
Expenses of Sale (manufacturing business only)	$.........	
Expenses of Management (if distinct from operation)	....	....
Net Profits from Operations		$.........
Deduct:		
Interest on Bonds	$.........	
Other Fixed Charges	....	....
Surplus for the year		$.........
Extraordinary Profits (detailed)		....
Surplus brought forward from preceding year		....
		$.........
Deduct:		
Extraordinary Charges not applicable to the operations of the year	$.........	
Interest and Dividend on Stocks	....	....
Surplus carried forward		$.........

FORM 8. Form of Income Statement Submitted by A. Lowes Dickinson

on shipments be credited to sales. If it is the custom of the concern to deliver f.o.b. destination, outward freight and cartage should be deducted from net sales. If it is merely done occasionally, this item should be regarded as a selling expense.

Net sales means gross sales less deductions for returns, allowances, or discounts in excess of 2%.

Net income is balance of income after deducting from gross income all costs, charges, and expenses.

These **deductions from gross income** are listed as follows by Montgomery:

1. Current charges against income, such as cost of goods; cash discounts; allowances not fairly deductible from sales prices; selling, general, and administrative expenses; bonuses to officers and employees; bad accounts and reserves for doubtful accounts; adequate depreciation (when not included in cost of goods), depletion and ordinary obsolescence (if there is such a thing); insurance; proportion of deferred charges carried over as applicable to the current period (if not absorbed—as they should be—in the accounts to which they relate); property and similar taxes paid, accrued or estimated; and any other charges and expenditures properly chargeable to current operations.
2. Deductions from gross income for interest paid and accrued on borrowed money (but not interest on capital), federal and state income taxes, accrued or estimated.
3. Losses arising from sale of capital assets, and other extraordinary items affecting prior periods.

The division of expenses should also correspond to the division of income, viz., operating and non-operating.

Deductions from net income should include only such items as those which have no relation to the current period.

Surplus is credited with net income and charged with dividends and deficits.

In studying the income account the natural order is to consider, first, the **revenues,** and second, **expenses** and **losses.**

It is customary to deduct **returned goods** from **gross income** before stating same. This is done because such returns are equivalent to a reduction of amount of sales. Sometimes, however, returns are shown as a deduction from gross sales. In the first division of the income account should be shown only income resulting from normal operations. Inclusion of extraneous items of income destroys the value of the gross figure for statistical purposes.

Rebates and allowances may also be deducted before showing gross income, unless large, in which case they should be shown as deductions on the statement

Important considerations in studying the income statement are:

1. Treatment of bad and doubtful accounts.
2. Treatment of income from work in progress.
3. Treatment of departmental and intercompany profits.
4. Treatment of income from sale of capital assets.
5. Treatment of appreciated capital values.
6. Treatment of depreciation.
7. Treatment of trade and cash discounts.
8. Treatment of net income.

1. Ordinarily the estimated loss for the period on account of bad accounts receivable should be deducted in the administrative expense section. In any event it should be regarded as a cost of collection and charged accordingly.

2. On this point Montgomery says:[9]

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[8] Auditing, Theory and Practice, Vol. I, p. 200.
[9] Auditing, Theory and Practice, Vol. I, pp. 314–315.

Earnings which are represented by completed transactions with trade debtors must be clearly distinguished from those earnings which are represented by transactions only partially completed, the results of which are in doubt. Except in unusual cases, no profit should be taken unless a cause of action has arisen which can be enforced against the debtor. In other words, if work in progress cannot be earmarked as being for a definite customer, or if it has not proceeded far enough to form the basis of an action, it must be taken into the inventory and valued as an inventory item and not as an account receivable. Ordinarily no profit or loss thereon should appear in the income account except when there is a definite change in values at the date of the balance sheet and accuracy demands a revision. If a revision is justified the result thereof must appear as a separate item; it must not be merged with realized income. But if work is undertaken "on order" and is proceeding satisfactorily, and if it is apparent that the estimated profit thereon will be realized, more or less, then it is permissible to take credit for the proportion of profit earned to the date of the income account.

3. All interdepartmental profits should be held in reserve until actually realized by sale. This does not mean that they cannot be considered for purposes of interdepartmental comparisons.

4. All profits resulting from sale of capital assets should be set forth separately. Preferably such items are carried to Capital Surplus to prevent their distribution as dividends. If not carried to Capital Surplus such items should at least be set forth separately, and if found desirable to pay dividends therefrom stockholders should be informed as to the facts.

5. Increased valuations through appraisals mean increased depreciation costs, therefore greater production costs. At time such increase is brought upon books, not an income account, but a special reserve account or Capital Surplus should be credited. Thereafter the proportion of depreciation applicable to this increased valuation should be charged against this special reserve or against Capital Surplus, as the case may be.

6. Depreciation is an operating cost and should be so shown in the income statement. Frequently it is omitted from the operating section of the statement and, if shown at all, is deducted from profits. Concerning obsolescence there is room for disagreement. Treatises should be consulted.[10]

7. Trade discounts are deductions from the invoice price, consequently do not appear in the income statement.

Cash discounts of 2% or less are properly regarded as a reward for prepayment and should be regarded as non-operating income. Higher rates should ordinarily be regarded as deductions from sales.

8. For treatment of net income, see section on "Net Income and Surplus."

PERCENTAGE COMPUTATIONS BASED ON SALES.—It is customary to base all percentage calculations in the income statement on **selling price.** However, there is no objection to the use of cost as a base if it is followed consistently. Dawson says:[11]

Profits are compared by means of percentages, and they may be either based upon cost or selling price. The more usual method is to make the calculation upon the selling price, but this is undoubtedly an impure method, mathematically regarded. In taking the sale price as the base, the profit is necessarily included therein—thus the base will vary with the profits, although the underlying motive of comparison by means of percentages is to reduce results to a common base.

This variation is, moreover, uncontrolled by any principle, being, in the case of a large proportion of profit, entirely disproportionate to the variation caused by a smaller rate of profit. As an instance, 10 per cent of profit computed upon the cost price is equal

[10] See Saliers' Depreciation, Principles and Applications, pp. 21–34.
[11] Accountant's Compendium, pp. 465–466.

to 9 1/11 per cent when the same result is taken on the selling price, but if 50 per cent of profit on cost prices be computed upon selling prices it will only show 33 1/3 per cent. Furthermore, as the sale price is composed of the cost price and the profit, the latter cannot exceed the sale price, from which it follows that a profit based upon selling prices cannot exceed 100 per cent, nor even equal 100 per cent, if the goods have cost anything at all. None of these impurities or limitations exist in connection with a cost price percentage. Of course, a given percentage computed upon the cost will always show a certain other percentage if the same result as regards profits is computed upon selling prices, i.e., 10 per cent based upon cost is at all times equivalent to 9 1/11 per cent of the selling price; 50 per cent of cost is always equal to 33 1/3 per cent of sale price; and so on. Therefore, so long as the rate of profit is under 25 per cent, and does not vary greatly, comparisons of results based on selling prices will not be as misleading as they would be otherwise, and may be adopted without great danger, provided the nature of the base upon which they are computed is always borne in mind. It is often urged that a sale price percentage is adopted on the score of convenience, the cost of the articles being difficult to ascertain on account of the difference of stocks and other obscuring elements. But the cost incurred in respect of the sales effected can be obtained by a simple expedient so soon as the amount of profit has been ascertained. As above stated, the cost and profit combined equal the selling price—therefore, if the amount of profit be deducted from the net sales, the cost of the goods sold must be the result, quite independently of the questions of purchases, differences of stocks, etc.

SECTION 7

INVENTORIES

CONTENTS

Stock Records

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(For list of forms, see complete table of contents.)

SECTION 7

INVENTORIES

Stock Records

PURPOSE OF STOCK RECORDS.—Main object is to handle greatest possible volume of business with least practicable investment in stocks. This involves consideration of turnover, i.e., the rapidity with which stock can be moved, thus avoiding unnecessary tying up of capital invested in stock. Shortages must be avoided. They cause delays in deliveries and consequent dissatisfaction. They may result in rush orders which must be executed at heavy transportation and delivery expense.

PROCEDURE.—It is first necessary to determine what the running inventory is to include. If there are both stores and worked material, these should be properly segregated. Supplies which can be secured outside at a moment's notice should not be included. In general, those stocks and supplies should be included which are indispensable to the productive process. All items of high value should be included to prevent waste as the result of carrying an excess amount.

There must be a thoroughgoing **system of stockroom control** to prevent withdrawal of stock without proper entry upon records. The **stockroom** should be located where it will be most accessible to all departments. None should be permitted in it except under personal supervision of the storekeeper, who must be held responsible for the stock. Where, as in small plants, the storekeeper has additional duties, the storeroom should be kept locked in his absence.

Items of stock are acquired as follows. On authority of a **purchase requisition** a purchase order is issued, a copy thereof being sent to vendor. He sends the goods, which are received by the **receiving department.** They are inspected and sent to the storeroom, where it is necessary to evolve some record on the stores or perpetual inventory record.

The **invoice** is received and checked by the purchasing department. Entry is made therefor in the **voucher register.** Stores or raw materials account in the general ledger is charged with stock purchased at end of each month, and credited with all materials withdrawn from stock, and it is here essential to secure co-ordination between the stores records and the general ledger account. The **stores records** are kept sometimes in the stores department; sometimes in the planning department. The danger lies chiefly in lack of co-ordination between the person responsible for the stores inventory and the accountant responsible for the accuracy of the general ledger. Material should be withdrawn from the storeroom only upon written authority in the form of a **requisition.** This should show quantity of stock withdrawn, what account is to be charged, and to what department it is to be delivered. Here pricing is necessary and here discrepancies arise because

the pricing may be done wrongly. If so, the credit to Stores or Raw Materials account in the general ledger is also wrong, and the balance of this account no longer represents true value of stores on hand. Much depends upon the designing of the stock record form and also upon the instructions drawn up for its use, especially the latter.

FORMS.—The forms to be used depend upon the character and size of the business. The essential forms are a **bin tag, a requisition,** and a **perpetual inventory form.** In large enterprises these may be elaborated upon. Changes in arrangement of the various forms may vary somewhat with the nature of the business.

BIN TAG.—Failure to describe each item of stock accurately is a common cause of failure of running or perpetual inventory systems. Each item should be given a **symbol number.** Various systems of symbols are in use. If the number of items is not large a simple system of numerals may be used. Cumbersome or inaccurate methods should be avoided. Form 1 is a simple bin tag form. Form 2 is one containing more detail.

PERPETUAL INVENTORY FORM.—Many different forms are in use. Form 3 shows a simple arrangement. Form 4 is designed to obviate certain difficulties in pricing which are liable to occur when some of the ordinary forms are used. Amounts received are brought into the "amount received" column and carried over and added to the previous balance in the "amount on hand" column. The price per unit of the amount received is entered in the "price per unit" column. Entries for succeeding receipts of material are similarly entered. When material is issued on requisition, the amount is entered in the "amount issued" column, and deducted in the "amount on hand" column. The price of valuing the material issued is taken from the "price per unit" column of the first line not checked in the second "Ck." column. This process is continued until the first amount is exhausted, after which the price is taken from second unchecked line in the "price per unit" column, and so on. Sometimes the requisition will exhaust one amount in the "amount on hand" column and require the taking of a part of the next. In this case the two prices may not be the same. The quantity requisitioned must in this case be split into as many parts as there are different prices and be priced accordingly. By this method calculations are simplified, and the total amount on hand is always shown. Any unused balance of a quantity received may be shown in pencil to simplify its use in connection with the quantities which follow. Materials should be issued on requisition at the same price at which they are charged when received. This price may be secured from the invoice or from the duplicate of the purchase order, providing it shows the correct price.

BIN TAG

ARTICLE..............

SYMBOL..............

MATERIAL............

MAXIMUM............

MINIMUM...........

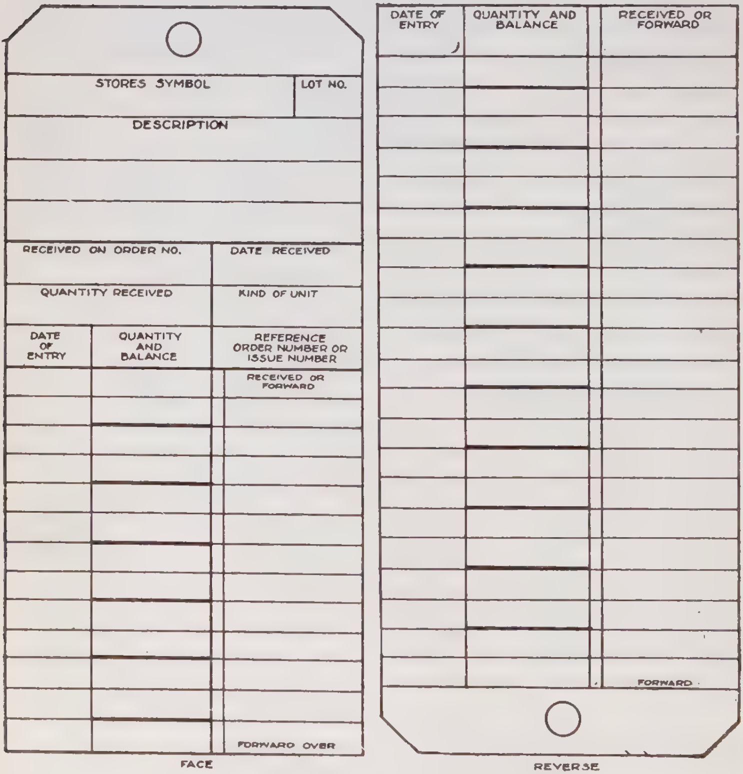
SYMBOL.............

Form 1. Simple Form of Bin Tag

A stock record sheet is given in Form 5. Points to be noted in connection with this stock record sheet are:

1. Running totals
2. Requirements and ordered
3. Appropriated
4. Received
5. Issued

The **merchandise stock book** is another form of stock record. On the debit side of this book are shown quantities purchased, cost per unit, and value in money. On the credit side are shown quantities sold, cost per unit, and amount of sales expressed in dollars and cents. A third or balance column is provided in which are shown quantities remaining, cost per unit,


STORES SYMBOL
LOT NO.
DESCRIPTION
RECEIVED ON ORDER NO.
DATE RECEIVED
QUANTITY RECEIVED
KIND OF UNIT
DATE OF ENTRY
QUANTITY AND BALANCE
REFERENCE ORDER NUMBER OR ISSUE NUMBER
RECEIVED OR FORWARD
FORWARD OVER
FACE
DATE OF ENTRY
QUANTITY AND BALANCE
RECEIVED OR FORWARD
FORWARD
REVERSE

Form 2. Bin Tag (face and reverse)
(From Madison Cartmell's "Stores and Materials Control")

and money value. If prices are subject to fluctuations provision should be made for showing average cost. (See Form 6.)

The following is an outline of the data which it is desirable to have shown on the stock ledger or book:

1. Description of material.
2. Factory requirements for each kind of material.
3. Quantity on hand, or order, and allotted to production.

STOCK RECORD

Article ____________ Maximum ____________
Symbol ____________ Minimum ____________

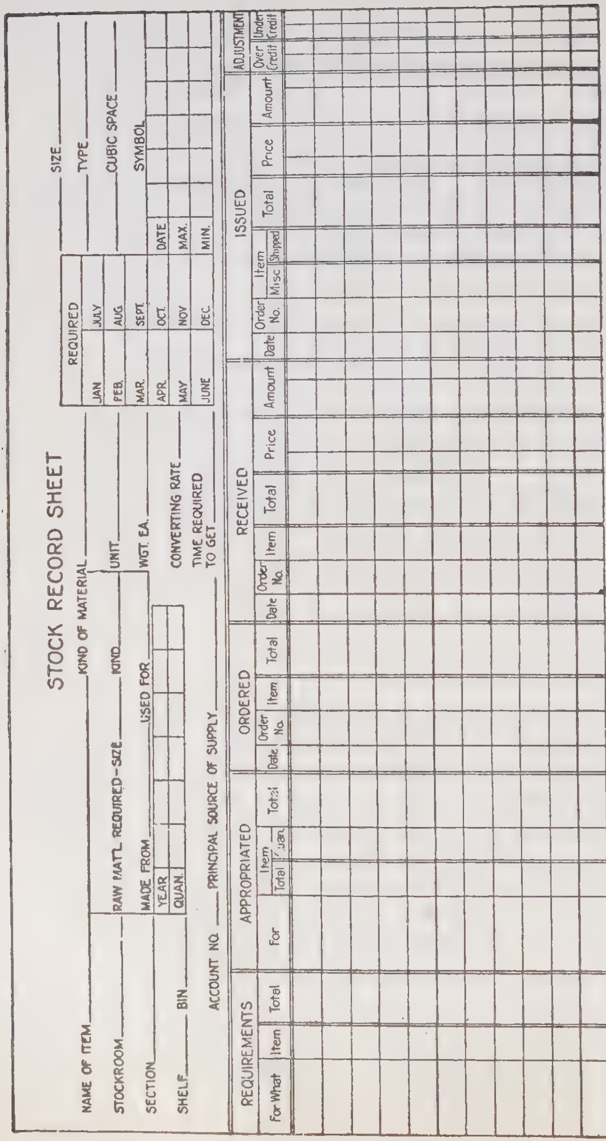
Ordered			Received			Withdrawn		Balance
Date	Req. No.	Amt	Date	Req. No.	Amt	Date	Amt	

Form 3. Stock Record

STOCK RECORD

Date 19-	Amount Received	Ck.	Price per Unit	Amount on Hand	Amount Issued	Ck.	Order No.	Date
3/7	200.00	1	20	200.00			Pur. 548	
3/17	300.00	2	25	500.00			Pur. 554	
				400.00	100.00	1	R. 25	3/12
				200.00	200.00	2	R. 36	3/20

Form 4. Stock Record



STOCK RECORD SHEET

NAME OF ITEM ____ KIND OF MATERIAL ____ SIZE ____

STOCKROOM ____ RAW MAT'L REQUIRED-SIZE ____ KIND ____ UNIT ____ TYPE ____

SECTION ____ MADE FROM ____ USED FOR ____ WGT. EA. ____ CUBIC SPACE ____

SHELF ____ BIN ____ YEAR / QUAN. ____ CONVERTING RATE ____ SYMBOL ____

ACCOUNT NO. ____ PRINCIPAL SOURCE OF SUPPLY ____ TIME REQUIRED TO GET ____

REQUIRED		
JAN	JULY	DATE
FEB.	AUG.	MAX.
MAR.	SEPT.	MIN.
APR.	OCT.	
MAY	NOV.	
JUNE	DEC.	

REQUIREMENTS			APPROPRIATED				ORDERED				RECEIVED						ISSUED							ADJUSTMENT	
				Item															Item						
For What	Item	Total	For	Total	Quan.	Total	Date	Order No.	Item	Total	Date	Order No.	Item	Total	Price	Amount	Date	Order No.	Misc	Shipped	Total	Price	Amount	Over Credit	Under Credit

FORM 5. Stock Record Sheet
(From Jordan and Harris, "Cost Accounting")

DEBIT					CREDIT							BALANCE					
								Price		Amount				Price		Amount	
Date	Invoice No.	Quan-tity	Price	Amount	Date	Sales Invoice No.	Quan-tity	Unit	Aver-age	Unit Basis	Average Basis	Date	Quan-tity	Unit	Aver-age	Unit Basis	Average Basis

Form 6. Merchandise Stock Record
(From P. J. Esquerre, "Applied Theory of Accounts")

4. Quantity to be ordered when time comes to procure a new supply, by production or purchase.
5. Unit price at which the particular item of store is to be priced on requisitions.
6. Quantity consumed during given periods.
7. Value of stock on hand.

This information serves the following purposes:

1. Scientific planning of purchasing and production.
2. Enables factory manager to meet requirements of sales department.
3. Eliminates errors in ordering.
4. Reduces dead stock to a minimum.
5. Avoids excessive inventories.
6. Aids purchasing, by means of statistics of requirements.
7. Aids financial control, by affording a running inventory.

ADVANTAGES OF STOCK RECORDS.—Stock record sheets sometimes provide for maximum and minimum limits to prevent tying up of too much capital in stock. Not only must quantities of materials be sufficient, but deliveries must also be kept ahead of requirements in factory or salesroom. Stock records facilitate checking of receipts of stock against purchase orders or special contracts. Sometimes materials are contracted for long before delivery. In such cases it is especially important that the contracts be checked against the stock records to prevent malpractice in pricing of goods purchased. A good stock record system aids in elimination of wastes which occur when no systematic method of recording stock transactions is in effect. It facilitates bidding on contracts because immediate reference can be made to past costs. It aids in the settlement of fire loss insurance. Although book inventories carried at cost prices may not represent market prices at time of fire, they give invaluable evidence of quantity and value of losses. They aid in reduction of obsolete stock because they show date of receipt of stock and thus permit determination of age of different classes of stock. Financial statements can be prepared monthly and on a more scientific basis when book inventories are employed than when dependence is placed upon physical inventories or upon estimates.

STOCK RECORD FORM TO USE.—There are two ways of keeping the record: (1) loose-leaf books, and (2) loose-card files. The loose-leaf book is preferable in a highly developed system of control because the larger sheets permit entry of necessary data. Cards of large size are expensive and awkward. Under simple conditions a simple card system may serve, and is preferable to small loose sheets. The loose-leaf principle is essential for speed in handling. Stock records kept in bound books are inelastic for indexing purposes, and it is impossible to allow the proper number of consecutive pages for given classes of stock. New sheets cannot be inserted for new material. The bound book necessitates a cumbersome index.

ORDERING QUANTITY AND ORDERING POINT.—In many modern establishments the **maximum** and **minimum** points have been displaced by the **ordering quantity** and the **ordering point.** The ordering quantity is the smallest amount advisable to purchase at one time. To determine this it is necessary to consider the time required to secure the new stock, cost of beginning production, etc. Cost of storage, etc., determine the upper limit. The ordering point is the amount needed to meet somewhat more than the average requirements, while the new stock is being procured. Sometimes a **danger point** is also indicated. When the quantity on hand

gets down to the danger point, investigation should be made to determine that the quantity ordered is coming in on schedule.

RUNNING TOTALS.—Tests made show that **balances** are not used nearly as many times as they are computed. As a consequence the **running total** method is being adopted. By this method any figure is available by a simple process of subtraction, and the clerical work is **addition,** except when a balance is required. **Running totals** give quantity to date as well as balances. Form 5 is designed without balance columns.

ORDERING NEW MATERIAL.—Before ordering new material an investigation should be made to see that there are no materials on hand which would be suitable. Only that which is to be standard material should be permanently included in additions to inventory lists. Usually stocks not to be replenished are placed in **unclassified stores.**

DATE ________ ORDER TO STOCK MATERIAL NO. ________

TO MATERIALS CONTROL DEPT.: SECURE A STOCK OF THE FOLLOWING MATERIAL ACCORDINO TO DIRECTIONS:

MATERIAL UNIT | MATERIAL DESCRIPTION

DETAILED SPECIFICATIONS OF MATERIAL

REMARKS ON CONSUMPTION, STORAGE, ETC

DATE INITIAL SUPPLY WANTED | PROBABLE CONSUMPTION: INITIAL, FUTURE | APPROVED

STANDARDC DEFINITION AND UNIT ASSIONED

MATERIAL CHECKED | SYMBOL ASSIGNED | ORDERING: POINT, QUANTITY | DANGER POINT | APPROVED ________ STORES RECORD DEPT

Form 7. Order to Stock Material

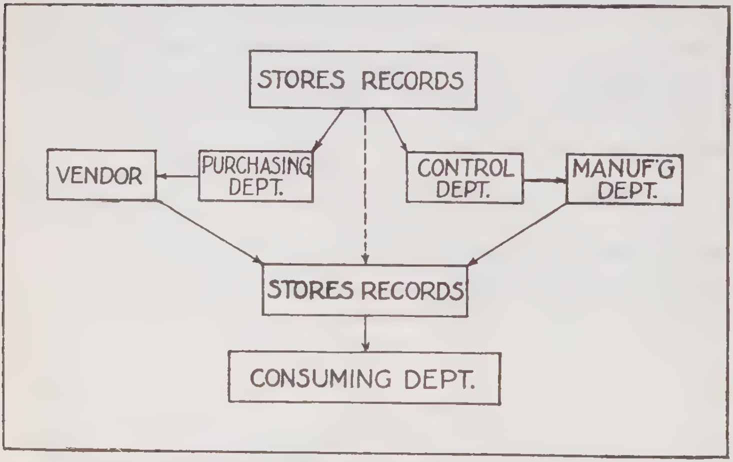
(From Madison Cartmell's "Stores and Materials Control")

To authorize the purchase of **new** stores, an **order to stock material** is the authority. (See Form 7.) This form gives description and definition of material, initial and probable future consumption, and other details helpful to determine **ordering point** and **ordering quantity.**

DISCREPANCIES IN STOCK RECORDS.—Book records are frequently found not to agree with actual inventories. This may be due to breaking up of bulk packages in order to issue to departments the exact amounts requisitioned. Thus, in manufacturing paper large amounts of sulphur are used. The amount indicated on the stores requisitions as delivered to producing department is usually considerably less than the amount actually delivered, because of loss in breaking up bulk quantities and because there is a tendency to add a small excess to the amount requisitioned.

When such discrepancies appear, the **tally card** should be adjusted and necessary corrections should be made in the stock records as to quantity, but no change should be made for book value of stock on hand. Thereafter quantities withdrawn should be charged against production at a somewhat higher unit cost than before the adjustment was made. Thus, if the stock records for a certain type of bolt whose purchase price is 2 cents each, shows, before adjustment, 200,000 bolts with a book value of $4,000, and if an actual count shows that there are 199,800 bolts, then the quantity should be corrected to read 199,800 bolts, but book value should be left at $4,000. Thereafter when bolts are requisitioned they are charged at a slightly higher amount per bolt.

If the discrepancy is large, it may be due to dishonesty of employees. Pending an investigation the discrepancy should be removed from the



FORM 8. Chart showing the Parallel Procedures for Procuring Materials by Purchase and by Manufacture

(From Madison Cartmell's "Stores and Materials Control")

stock record or raw material ledger, by means of a journal entry crediting "Raw Material" for the amount of the discrepancy and charging an "Inventory Adjustment" account. In the stock record the account in question should be credited. At the end of the accounting period the Inventory Adjustment account in the general ledger should be closed into Profit and Loss as an item of expense. It should not be considered as a charge to production.

ORGANIZATION FOR MATERIALS CONTROL.—The materials control department in a large enterprise occupies a position in relation to control of materials similar to that of the personnel department in relation to control of men. Its head should be responsible to the chief of the production organization. The function of the materials control department consists not only in keeping stock records, but also in laying out and scheduling production orders for producing department and purchase orders for pur-

chasing department. It studies sales orders in order to lay out its program of future requirements. To enable production orders to be executed promptly, the control of materials department should see that required materials are delivered promptly at the proper place. Size of plant must govern methods adopted for storing and issuing materials. The stockroom may be centralized or decentralized, according to size and layout of plant. In manufacturing, the present approved practice is frequently to have sub-storerooms and to separate stockrooms for manufactured parts and finished goods from that for raw materials and supplies. Certain heavy or bulky articles need be stored only in a technical sense, being in reality left in sheds or out of doors. The relationship existing between the materials control department, the stores records, and the other parts of the organization are indicated in the following diagram (Form 8).

STATUS OF CONTROL DEPARTMENT.—Process of ordering begins with determination of need for materials or supplies. This need is expressed by a requisition upon the storekeeper for the desired materials or supplies. This requisition first comes to the clerk in charge of the controlling stores records, who ascertains from records whether the article called for is in stock; if not, whether it is to be purchased or manufactured. If it is to be purchased, the purchasing department is called upon to procure it. If it is to be manufactured, the control department starts a requisition order and accompanying papers to initiate its manufacture. Through either route the required article reaches the stores department and is entered on its records, thus completing the cycle illustrated in the diagram above. All details of orders for articles to be made by the various departments pass through the control department.

INVENTORY UPKEEP.—To keep inventories of stock at proper levels it is necessary to know: (1) quality or grade necessary, (2) quantity required, and (3) time when needed. The question of quality is an important one, in some cases requiring tests and research. Usually it is sufficient to reduce the requirements to exact specifications, which are kept on file and used as standards in purchasing materials which must fulfil certain requirements.

The **quantity** to be kept on hand must be determined by present and future requirements, taken into consideration in connection with the time required to procure additional quantities by purchase or manufacture.

Inadequate storage facilities is a frequent cause of failure of perpetual inventory systems.

Proper inventory upkeep necessitates the co-ordination of the production program with future estimated sales. If future sales are based on careful calculation, it will be possible to avoid great waste as the result of inadequate or excessive purchases of materials. Materials control, therefore, really begins with a consideration of future sales. The sales program must, however, be made to agree with the productive capacity of the plant. Production should be controlled by statistical estimates of future requirements, as affected by the future sales program and by financial limitations. There should also be compiled regularly statistical reports concerning the amount of capital tied up in inventories, as well as concerning materials consumed and materials ordered but not yet received.

CLASSIFICATION OF INVENTORIES.—For purposes of establishing adequate control, the inventories should be classified into as many groups as conditions warrant. The following is a typical classification:

1. **Raw materials** and **supplies** (or, general stores) include materials purchased outside and not as yet put through any manufacturing process; also certain supplies.
2. **Worked materials** include materials partly or completely processed.
3. **Finished product** includes manufactured products ready for shipment.
4. **Scrap** and **salvage** include materials not needed or which are unusable.

PRICING STOCK RECORDS.—In some systems values are not carried on stock records. When values are carried, requisitions can be placed at actual cost. To insure accuracy a systematic method of checking up should be instituted. Each item in the stock ledger should be checked at least once a year. Cost of stock is the invoice price plus transportation charges. It is difficult to distribute storage charges over stock on hand. They may be included in general overhead. When costs are not received until after requisitions are made, estimated costs should be used and an adjustment made later. Preferably, prices should be predetermined. This can be done by having the purchasing agent ask for quotations before sending the purchase order, especially if material is to be sent f.o.b. destination. It is necessary, of course, to subtract trade discounts. Adjustments must then be made if prices are changed.

In **pricing requisitions** two methods are followed: (1) use of **actual price** of each lot of stock as long as it lasts; (2) use of an **average price** of two or more lots. The first is an **actual cost** method; the second is a **standard cost** method. The tendency is to adopt standard costs because it permits comparisons to be made between firms in the same line of manufacture. **Actual cost** should be used where materials are purchased for a specific order; also where a staple of one general kind is in stock but varies in quality. Frequently the oldest record price is used, so long as the stock to which it applies is not exhausted. When it is exhausted, the next recorded price is used. When the **average price** is used, the average must be recalculated each time new material is received.

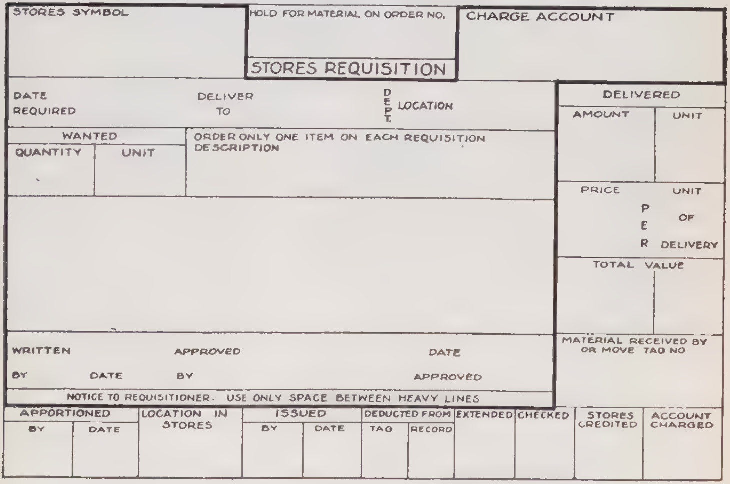
THE STORES REQUISITION.—A stores requisition is an order for the delivery of materials from storeroom to factory. It should provide for a symbol of the account to which the material is to be charged, the amount of material and its description, the name of the department to which it is to be delivered, when delivery is to be made, and signature of party authorizing it. Form 9 is a typical stores requisition blank.

Stores requisitions should originate in the **production control department.** All requisitions should be scrutinized by the storekeeper for errors. In some cases it is desirable to limit the amount which can be sent out on one requisition, especially if the material possesses considerable value. After the material is issued, the requisitions are forwarded to the control department where they are sorted according to symbol for posting. Posting is made to stock ledger cards or sheets, the requisition first being priced, and extensions made. **Unused material** is returned to the stockroom accompanied by a **stores return** showing account to be credited. This stores return is then sent to the control department. The price on it should agree with the price at which the material was requisitioned.

CHECKING UP STORES RECORDS.—Checking up quantities requires **a physical count.** The bin tags furnish one method of checking up, but

these may be wrong. Inaccuracies arise from various sources—carelessness, mistakes in description, and so on. One good method of checking up is to make a physical count of a given material each time a requisition against it is filled. Discrepancies should be adjusted either by correcting original entries or by writing off the difference to a Stores Inventory Adjustment account.

CLASSIFICATION AND SYMBOLIZATION.—Classification and its expression by means of symbols is an important feature of inventory control. It should be reduced to a unified system. This necessitates a careful grouping of all activities. The accounting records usually give an insight into the fundamental activities; therefore, fundamentally the system of classifi-

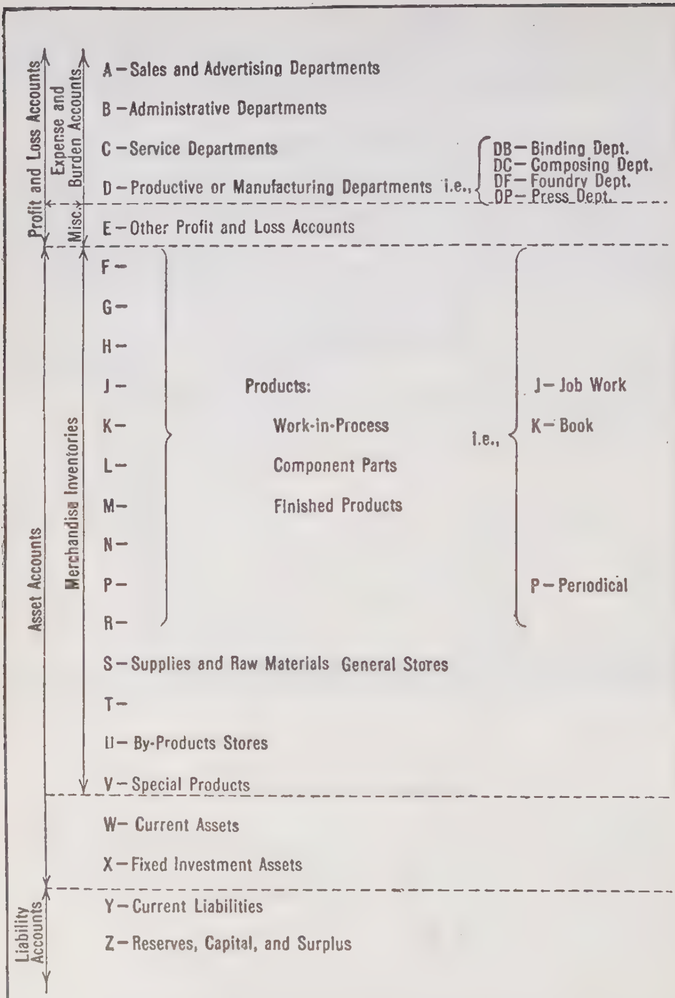

STORES SYMBOL
HOLD FOR MATERIAL ON ORDER NO.
CHARGE ACCOUNT
STORES REQUISITION
DATE REQUIRED
DELIVER TO
DEPT. LOCATION
DELIVERED
AMOUNT
UNIT
WANTED
QUANTITY
UNIT
ORDER ONLY ONE ITEM ON EACH REQUISITION
DESCRIPTION
PRICE PER UNIT OF DELIVERY
TOTAL VALUE
WRITTEN BY
DATE
APPROVED BY
DATE APPROVED
MATERIAL RECEIVED BY OR MOVE TAG NO
NOTICE TO REQUISITIONER. USE ONLY SPACE BETWEEN HEAVY LINES
APPORTIONED
BY
DATE
LOCATION IN STORES
ISSUED
BY
DATE
DEDUCTED FROM
TAG
RECORD
EXTENDED
CHECKED
STORES CREDITED
ACCOUNT CHARGED

FORM 9. Stores Requisition
(From Madison Cartmell's "Stores and Materials Control")

cation should follow the order of accounts shown in the general ledger. All items being grouped under their proper classification, each item should receive a distinctive symbol and description, and each should have a distinctive place in its own group. Within groups the plan of classification must be determined upon a logical basis.

A **symbol** is a concise form of accurate description of a given object, and usually consists of letters, or numbers, or both. Symbolization consists in the permanent identification of the elements in the final classification. It is an important step in standardization of materials.

Symbol systems may be based on letters or on numbers. Those based on numbers are similar to the **Dewey decimal system.** It is preferable, for inventory classification, to use a combination of the two. The **numerical system** permits of the 10 basic classifications. The **alphabetical system** permits use of 23 letters, I, O, and Q not being used because they resemble numerals. Each item must be represented by but one symbol, and each



Form 10. Chart showing Classification and Symbolization of Main Accounts (From Madison Cartmell's "Stores and Materials Control")

symbol must represent but one item. If possible, symbols should possess suggestiveness, as, S for supplies, etc.

Standardization of stock or stores must precede their symbolization.

The establishment of **control accounts** must be based upon a logical classification of **stores ledgers.** A possible division of the stores ledger would be: general stores, component part stores, finished product stores, and by-product stores; but specific conditions must govern. Corresponding **controlling accounts** should be set up in the general ledger. Charges to this general ledger control account are made at the end of each accounting period, postings being from the purchases journal or voucher register, whereas entries in the subordinate ledger may be posted from vendors' invoices.

PROCEDURE FOR SYMBOLIZATION.—The accompanying chart (Form 10) shows the basic classification of main asset and liability accounts. Letters of the alphabet symbolize the main classification. Numerals should be used to denote subclassifications or such as cannot be effectively represented by means of combinations of letters. Note that S symbolizes the general asset account, Supplies and Raw Materials, and D represents productive departments. Therefore, SD symbolizes supplies for a productive department. Similarly other combinations may be used, as:

SA—Supplies for sales and advertising department.
SJ—Raw material for job work only.
ST—Tools.
etc.

Each of these general classes permits of further subclassification. Thus if SC represents service department supplies, then within this departmental classification:

SCJ—Supplies used by janitor's department.
SCS—Supplies used by shipping department.
etc.

The shipping department uses binding materials, as, string, cord, rope, and gummed paper tape. These may be symbolized:

SCS1B—String used by shipping department to bind packages.
2B—Cord used by the shipping department to bind packages.
3B—Rope used by the shipping department to bind packages.
4B—Gummed paper tape used by shipping department to bind packages.

Inventory Control

INVENTORY CONTROL.—This involves such problems as the consideration of the quantity desirable to carry, determination of the ordering points, handling of carrying charges, use of graphs to show consumption, and so on.

CARRYING CHARGES.—These include taxes, depreciation, rent, insurance, clerical and manual labor, and interest on the investment. It is estimated that they amount to from 10% to 20% per annum on value of stock. In practice it is impossible to include them as a part of inventory costs, although theoretically they should be included. These should be considered in determining upon advisability of carrying large stocks.

ORGANIZATION FOR CONTROL.—Proper inventory control requires method and organization. The plan must be simple but thorough, and must

provide for handling of increases and decreases in stock efficiently. It must provide accurate, up-to-date statistics and data.

ORDERING POINTS.—Maximum points for the various classifications are managerial problems. Factors to be considered are: financial conditions, unfilled sales orders, turnover, etc. In falling markets inventories should be reduced as much as is consistent with safety. In rising markets heavy purchases should be made. Determination of amounts below those of general classification must be left to subordinates, acting under instructions.

The **minimum ordering point** is determined by what can be economically ordered and stored. This involves consideration of many factors. The **upper limit** is determined by the sales budget. Requisitions for additional supplies should be considered in connection with these.

The following description of a method for determining the minimum limit of stores is adapted from "Business Statistics," by M. T. Copeland:[1]

To set a minimum it is necessary to examine factors which affect exhaustion and replenishing of stock. Of these there are twelve possible cases but it is rarely necessary to consider more than three or four in a given instance. The twelve are as follows: the unit of time being the week and the unit of quantity the one decided on as the standard for **balance-of-stores record:**

- (a) Time required by the purchasing department to place an order after receiving a purchase requisition from the balance-of-stores clerk.
- (b) Time required by the seller to ship the goods after receipt of the purchase order.
- (c) Time required in transit.
- (d) Time required to pass goods through the receiving room and to the desired point in the manufacturing department.
- (e) Time required to manufacture goods.
- (f) Time required to ship goods after being manufactured.
- (g) Time required as a factor of safety.
- (h) Average quantity consumed per week.
- (i) Balance on hand.
- (j) Quantity on order.
- (k) Maximum quantity that a single order might require.

Let L = the allowable minimum quantity.

Using the letters indicated above, the sum $(a+b+c+d+e+f+g)$ equals time in weeks required to secure raw material and manufacture a lot ready for shipment. This sum multiplied by h gives quantity sold during time required to replenish stock. It might, therefore, be expected that if the balance-of-stores clerk made out a requisition on purchasing department for raw material when this quantity was left on hand, the new lot would be ready just as the old lot was used up. There must, however, always be enough on hand to fill the maximum order that might be expected, so the factor k is added. It often happens that the quantity to order is small and the time required to obtain raw material is long. In such cases, the factor j must be subtracted. The complete general formula then becomes,

$$L = (a+b+c+d+e+f+g)\,h+k-j,$$

and a requisition should be put through as soon as i becomes less than L. It is not necessary for the balance-of-stores clerk to figure an elaborate formula of this kind. When all of the quantities, a, b, c, d, e, f, g, h, k, remain constant, or nearly so, over a period of time such as a year, the formula need be figured but once and the minimum specified on the record as a number. When, however, one or more of these quantities varies enough to warrant the extra work on the part of the balance-of-stores clerk, the formula should be specific on the record, using words instead of letters, as very few clerks will readily comprehend the significance of algebraic symbols.

The quantity b may be regarded as varying, so that it must be considered. This would be true, for instance, in case bar steel were the raw material. This sometimes may be had from the mills in 2 weeks and sometimes it requires 6 months. It is obvious that it would

[1] Pp. 436–439.

be foolish always to keep a 6 months' supply on hand, yet the supply must come in regularly. This is accomplished by having the purchasing department make monthly or semi-monthly reports to the balance-of-stores clerk regarding the time it takes to get delivery. The purchasing department is instructed to add a factor of safety which shall cover the quantities a and c as well as g. The balance-of-stores clerk should periodically compute h on all items and make such corrections as are required. The quantity k, so far as these specimen duties are concerned, is considered very small and may, therefore, be neglected. The quantity j does not often enter into the calculation, and, when it does, is considered by specifying that a requisition should be put through when sum of goods on hand and on order becomes less than prescribed minimum. It is thus seen that this apparently complicated formula resolves itself for the case in point into a consideration of but two quantities. After the balance-of-stores clerk has figured a few items by this method, he can usually tell at a glance whether a requisition should be put through. The person setting the minima should make himself very familiar with the theoretical formula as given and should reduce this to simple terms covering specific cases which may be practically applied by the balance-of-stores clerk. There are probably several hundred different ways in which this formula may be reduced to practical application. By its intelligent use, however, it is possible to keep but a relatively small amount of stock on hand and yet be sure of an adequate supply.

The **maximum** is, of course, the sum of the minimum quantity and the quantity to order. The quantity to order is dependent on five factors. These are as follows:

P. Average weekly consumption.
Q. Set-up cost plus loss of profit, if any, due to idleness of machine.
R. Shop cost (except preceding item) per unit.
S. Rate of interest plus rate of depreciation, both per week.
T. Storage charges per unit per week.
Let X = quantity to order.

It costs as much to get ready to make a run of goods if only one piece is made as if a thousand are made, or whatever quantity can be turned out without resetting a die or making other changes. Consequently, the more goods which can be manufactured in one lot, the lower will be the cost. But if, as is usually the case, these goods must be stored in the warehouse for some time until sold, there is an expense occasioned for warehouse space, and money is tied up, the interest on which should be charged against the goods, and there is usually a loss through depreciation. Thus, so far as storing the goods is concerned, the more made at a time, the higher the cost. These two forces pull in opposite directions. There is a point where cost is a minimum. If quantity run be smaller than this amount, increased cost per unit, due to distributing set-up charges over fewer pieces, more than offsets reduction in cost of warehousing. On the other hand, if quantity run be greater than this minimum, warehouse expense more than offsets saving in manufacturing cost. **Calculus** makes it possible to determine the formula which expresses quantity to order so that sum of manufacturing and warehouse expenses shall be a minimum. Expressed algebraically this formula is:

$$X = \sqrt{\frac{2PQ}{RS + T}}$$

To find proper quantity to order in any particular case, substitute proper figures and solve by arithmetic. No knowledge of calculus or algebra is required to use this formula. Great care should be taken in getting the units correct. The same unit of quantity must be used for P, R, S, T. Costs must be written as dollars and decimal parts of a dollar. For instance, if shop cost is 6 2/10 cents per unit, it must be written $.062. If proper care is taken regarding units of quantity and money, it is easy to figure the right size run to make on each item to give maximum economy. This formula is of greatest service in connection with expensive, bulky, perishable goods, with a high set-up charge, and of least service when reverse is the case.

Graphs are helpful in studying ordering points. Quantities consumed should be expressed on one scale, preferably the ordinate, and time on the other scale. A glance at the graph shows trend of consumption, preferably by monthly periods, and thus enables making of changes in the **ordering point** and **ordering quantity.** Following quotation and chart are from Cartmell's "Stores and Materials Control" (pp. 137–138):

STORES SYMBOL

UNIT

APPROXIMATE UNIT PRICE

DESCRIPTION

ON HAND							
ON ORDER							
APPORT.							
DEFICIT NO. AVAILABLE IF ANY							
DATE							
FILLED IN BY							
TIME REQUIRED TO OBTAIN							
MINIMUM ECONOMIC ORDERING QUANTITY							
DATE							
FILLED IN BY							

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	

ORDERING QUANTITY							
ORDERING POINT							
DATE							
SET BY							

FORM 11. Graphic Record of Consumption
(From Madison Cartmell's "Stores and Materials Control")

As an aid to the forming of a correct judgment when an item of stores reaches the "ordering point," its consumption should be reviewed to see if a change has been made expedient by changing conditions. Form 11 is designed to make such a review easy. The lower part of the form graphically presents the record of consumption for a period of 2 years. Whenever the stock falls to the ordering point, one of the cards is made out to show the consumption to date. From left to right the lines represent the months, while from the bottom to the top, the spaces are for the quantities consumed, using whatever scale best suits the case. The spaces above the graph are filled in by the stores records clerk and by a person familiar with the securing of the material, such as a member of the purchasing or the production control department.

When the executive of the control department responsible for the "ordering quantities" and "points" studies this chart, he is able to tell at a glance the trend of the consumption for the period charted. This information, with his general and his specific information of future manufacturing requirements enables him to make any needed changes in the ordering point and ordering quantity. If a change is made, the new quantities are placed on the stores record and the proper action taken, while the chart is filed by its symbol until the ordering point is again reached. Then the consumption curve and other data are brought up to date and the card is again ready for the decision of the reviewer.

Expense of maintaining these graphs is slight. The cards can be used again and again and little time is needed to bring them to date. The system has been used at a weekly cost of about \$30 in a stores organization handling over 20,000 items inventorying over \$400,000. Inventories were cut \$100,000, saving at least \$10,000 in carrying charges alone—and the operating cost was \$1,500 a year.

Material in process should be carefully controlled to prevent it from becoming excessive in quantity. **Drifting** must be avoided. A **maximum limit** for quantity of work in process should be established.

STANDARDIZATION AND SPECIFICATIONS.—These are important factors in inventory control. Standardization applies to both materials and methods. As to methods, standardization applies to ways of handling and storing materials. Standardization of materials permits reduction of inventories, since the bulk of most trades is done in comparatively few styles. During the war automobile tire manufacturers agreed to reduce the number of styles from 287 to 32. In manufacturing, standardization reduces the number of production orders, hence reduces work of making specifications, etc. Larger purchases of materials can be made at one time and unit costs thus reduced. In determining a **standard material** it should be studied from three points of view:

1. How many uses can this material be put to and in which departments can it be used?
2. What other materials resemble this material and can the one be substituted for any other?
3. What quality of this material will be good enough for the purpose it is to serve?

Standardization should be carried out at the time classification is established.

Standardization necessitates **specifications,** i.e., written description of each characteristic of the material standardized. Standard specifications have been established for many basic commodities. These may be secured, for example, from the catalogs of manufacturers and dealers and from the bulletins of the U. S. Bureau of Standards. The following is an illustration:

Cotton drilling:
Unbleached—
44 inches; on sample and specifications......................

Material.—Shall be made from long-stapled, sound-fiber cotton, free from shives, motes, or adulteration.

QUALITY.—The fabrics shall be a good quality, evenly spun and woven, and commercially free from faults.

WIDTH.—Shall be not less than 44 inches nor more than 45 inches when finished.

WEIGHT.—Shall be not less than 12 ounces per linear yard.

CONSTRUCTION.—Shall be not less than 54 threads of warp nor less than 46 threads of filling per inch in the finished cloth.

TENSILE STRENGTH.—The warp shall be not less than 100 pounds, and the filling shall be not less than 90 pounds.

FINISH.—The fabric shall be soft finish and shall be free from "loading" of any kind.

Standards require occasional revision to meet varying conditions and demands.

ARRANGEMENT, ETC., OF STOCKROOM.—Materials must be kept in good condition and accessible; also so as to permit handling with minimum of time and effort. This requires careful allotment of space to different materials, with aisles properly located. Cartmell (p. 157) suggests the following to be kept in mind in arranging layout:

"1. Methods of placing and removing various classes of items should be reduced to standards. This requires uniformity of method both as regards stowing units of lots and the separating of lots so that the oldest may be used first.

2. The equipment should be flexible and interchangeable for varying conditions.

3. Every item should be properly placed. The location is governed by the difficulty of handling, the quantity in stock, the frequency of use, and various special considerations of perishability, safety, or similarity to the storage problem of other materials.

4. All goods should be clearly identified before being stowed. This includes a tag for every lot and a label for every unit or package.

5. All goods should be stowed in issuable units and placed to show the greatest possible number of individual units or packages.

6. Each item (and each lot whenever practicable) should be kept distinct and separate from every other item and lot.

7. The installation of proper equipment which will aid in handling items in a minimum of space, of time, and of effort."

Cartmell also gives following as sequence to be followed in planning new storage areas:

"1. The listing and classification of all items expected to be stored according to problems of:

(a) Measurements.
(b) Difficulty of handling.
(c) Frequency of use.
(d) Special considerations, as of sensitiveness, perishability, or of peculiar similarity.
(e) Quantities to be carried.

2. Determination of ample storage space to be required.
3. Determination of proper unit storage space.
4. Determination of proper aisle spaces.
5. Determination of proper location in relation to departments served.
6. Determination of proper layout of storage and aisle space as related to general location of classes of items and area of total space available.

7. Lastly, the planning of structures so that entrances, aisles, posts, platforms, windows, and other necessary features will not interfere with, but will facilitate the most desirable layout of the stores themselves."

These should be reduced to written instructions. With addition of instructions for handling, they constitute complete instructions.

In **locating the stockroom,** the aim should be to keep the movement of material in one direction as nearly as possible. Stockroom for each class of material should be as close as possible to the delivery point. This simplifies trucking problems. Aisle arrangement governs storage space. For shelving, 24 inches is a suitable depth. For articles placed upon the floor, 6 feet is a good width for a row. Main aisles must permit passing of trucks; connecting aisles should be one-way width. Standard width between bins where contents are handled by hand is 30 inches. Aisles must be kept unobstructed. Inadequate space is a serious defect in a stockroom. Division of space into sections is advisable, each section for an allotted purpose. Outline of each may be marked by lines painted on floor. These lines may be as much as 3 inches wide. Adequate room is necessary for sorting. In case of finished goods storeroom, adequate space must be supplied for packing. Direction of main aisle should conform to direction of maximum travel. Sub-aisles should be at right angles to these as well as to the source of light. Storage spaces should be symbolized to enable easy location of materials. Number each row of bins, even numbers on one side of aisle, odd numbers on the other side of aisle. Then number each section of each row of bins, beginning at main aisle. Place odd numbers on one side of aisle; even numbers on other side. Next, number each section of each row of bins, beginning at main aisle, odd numbers on one side of aisle, even numbers on other side. Give to each tier in each section a letter. This should appear in the index between the two numerals. Thus, "24B7" might be next to the top tier in 7th section of 24th row. A chart of layout and symbolization should be pasted in a prominent place in the stockroom. An index file of location of each article should also be prepared.

A **standarized rectangular storage space unit** is desirable, as it permits a high degree of interchangeability and flexibility. Of **bin subdivision,** Cartmell says (p. 165):

The best **shelving for bins** is constructed of standardized steel parts which can be adjusted to form a storage space of any desired size and opening by the simple operation of bolting a few steel sheets and bars to a frame. All parts are standardized and interchangeable, easily and quickly erected or taken down. The stacks may be made up singly or arranged in series in rows. For instance, a bin, 24x24x24 inches inside, gives opportunity for a wide variety of subdivisions 24 inches deep whose other two dimensions will be even fractions of 24 inches.

The advantages of this shelving are many. Its mobility and its convertibility into convenient receptacles for handling widely varying types of material, its great strength, its economical use of floor space, and the fact that it is fireproof and practically indestructible, make it especially desirable. It can be purchased in sections and added to as conditions require. Changes of location and arrangement are easy to accomplish with this standardized equipment, without serious interference with the necessary work of the storeroom and without the charges for labor and new material which inevitably follow alterations on wood construction.

STOWING MATERIAL.—Stowing of material should be standardized. Proper subdivisions of space must precede stowing. Under the **double-space system,** double the amount of space normally needed for the quantity of a given material is set aside to receive it. This avoids necessity of separate storage space. Under the **single-space method,** additional storage must

frequently be sought elsewhere. Special items should receive special attention. Give heaviest items the shortest hauls, store them nearest the floor, etc. Articles used together should be stored near each other. Identify packages, etc., by labels wherever possible, placing them preferably on ends of packages. **Bin tags** are used for material stowed in stacks and bins. They are made out on receipt of material; and show symbol, quantity, etc. Form 2 (p. 348) shows a bin tag with spaces, quantities, balances, etc.

The bin tag should be placed in a **bin tag holder** kept in a conveniently accessible place in or near the bin. If surplus stock of given kind must be kept in another place, a **surplus stock tag** showing its amount and location should be placed in the bin tag holder.

Rules for Piling, Counting, etc.—

1. Place goods all one way, unless desirable to reverse or cross-pile for stability.
2. Lay goods with their ends out towards the aisle.
3. Place labels all one way to make for ease in counting, etc.
4. Place articles in defective wrappers last to permit removal first.
5. If possible, store goods in packages containing quantities customarily used at one time.
6. In piling, begin stowing at back left-hand corner and vertically until one column is completed. Bring first row of such columns to front and complete it. Start second row in farthest left-hand corner, and proceed in same manner.
7. To aid in counting, keep columns, stacks, etc., uniform. Allow only last column, stack, etc., to remain incomplete. Cubical piling is preferable to pyramidal piling.
8. In a full pyramid, quantity equals product of number on bottom tier times number of tiers plus 1 divided by 2.
9. Pile in groups of five and do not break groups to fill up space.
10. In removing, take in order of age, beginning with the oldest; but clear any aisle spaces or incomplete piles first.

Turnover

DEFINITION.—Turnover is the number of times capital in the form of stock-in-trade is reinvested in stock-in-trade during a given period.

TO FIND TURNOVER.—Montgomery gives the following rule for ascertaining turnover:[2]

> To ascertain the turnover, take the starting inventory, add the purchases or cost of manufactured goods, and deduct the inventory at the end; divide the total by the starting inventory. The calculations are based upon a normal inventory. The result is the number of times the capital invested in stock-in-trade has been turned over during the period. In the event that the value of the inventory throughout the year varies considerably, or in case of a continuous increase or decrease in the volume of business which might have a corresponding effect on the inventories, a more accurate method of determining the turnover would be to use the average inventory instead of the starting inventory.

This method does not make allowance for variations in the amount of inventories from month to month. Thus, if the starting inventory in a given year is $25,000, purchases amount to $400,000, and inventory at end of

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[2] R. H. Montgomery, Auditing, Theory and Practice, Vol. I, p. 445 (1921 Ed.).

year is \$50,000, the turnover for the year is 15, because \$25,000 + \$400,000 − \$50,000, or \$375,000, is fifteen times the first inventory. If, in the year following, starting inventory is \$50,000, closing \$25,000, and purchases during year \$375,000, turnover is 8, because \$50,000 + \$375,000 − \$25,000 is eight times the opening inventory. The difference in the inventories at the beginning and close of the year may be largely accidental, yet the difference in the result is so great that, unless inventories are quite normal and unvarying from month to month and year to year, it is necessary to modify the method of computing turnover.

This may be done by ascertaining normal quantity of stock-in-trade carried, which may be either greater or less than the inventory at beginning of the year. To do this it is necessary to take an inventory at monthly or other intervals during the year. The average of these may be regarded as the normal inventory.

PROPER BASIS FOR TURNOVER.—Following Montgomery, most American accountants figure turnover on the basis of cost, i.e., they regard turnover as the number of times the normal stock-in-trade is reinvested in the goods sold. Many British accountants, on the other hand, say that turnover is the number of times the inventory is contained in the sales. It is evident that when two or more businesses are compared, it is very important that the turnover be determined for all on the same basis.

Some authorities suggest working capital as a basis for turnover. This is the excess of current assets over current liabilities. This is a comparatively stable figure and therefore affords a more stable basis of comparison. Thus, if the excess of current assets over current liabilities is \$25,000, and goods are sold during the year which cost \$150,000, the working capital is turned over six times, and this may be said to represent the turnover. If a large amount of working capital is used for advertising purposes, it follows that it cannot be used to purchase goods to be sold. The same is true if a large amount is locked up in accounts receivable. The result of either of these is a lessened turnover of working capital. When the opening or normal inventory is made the basis, the turnover may remain the same although the volume of business is on the increase or decrease, because the inventory increases or decreases with the expansion and contraction of business.

Walton and Finney make the following statement regarding the use of working capital as the basis for the reckoning of turnover:

> The use of working capital as the basis of turnover is logical, first, because the capital is put in the business for the purpose of being turned over as rapidly as possible; second, because it is virtually constant; and third, because it presents all the elements concerned in the turnover, not only the stock-in-trade, but also the accounts and notes receivable, by means of which the turnover is effected. The turnover of working capital also furnishes a better criterion of the excellence of the management. With the inventory as the only standard, a manager can make an apparently good record by storing his stock-in-trade. If, however, he uses working capital as the standard, he makes his best record by diligence in collecting outstanding accounts, and increasing the supply of cash for the development and handling of a more extensive business.[3]

The following is based on material supplied by J. H. Bliss:

> In the **retail business**, turnover of inventories should be figured by dividing average inventory at cost, averaged monthly, into cost of sales for year. In some instances where **retail method** of estimating inventories is used and retail inventories are available, the inventory at retail, averaged monthly, divided into sales for year, gives turnover figure. While turnover can be figured in a rough way by dividing inventory at cost into sales, it

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[3] S. Walton and H. A. Finney, Mathematics of Accounting and Finance, p. 87.

is not a correct turnover figure. If a wide gross margin is realized on goods, the turnover is considerably affected by this plan. To get a correct turnover figure, inventory at cost should be divided into cost of sales or inventory at retail into retail sales.

In a **manufacturing industry,** turnover of **raw material** is determined by dividing average inventory into amount going into process during year. Turnover of **goods in process** is found by dividing average inventory of goods in process into total amount credited to goods in process account for year. Inventory of **finished goods** is found by dividing average inventory of finished goods into cost of sales.

In a **departmentized organization,** turnover should be figured by departments.

If a **general or average turnover** is desired for a manufacturing industry, divide average of total inventories of raw material, goods in process, and finished goods into cost of sales.

A **general or financial turnover** of inventories may be figured by dividing average inventories into sales. Over a period of time such statistics show trends about as well as more accurate turnover figures. This method is useful to measure turnover from brief financial statistics, but if all statistics are available, turnover should be figured in detail and be applied to specific departments to determine what particular part of the business or stocks of goods are not showing proper turnover. This provides better information for supervision and action.

Turnover of **inventories of supplies** should be figured by dividing average inventory of supplies into supply cost or expense for year. Turnover of **inventories of storerooms** is found by dividing storeroom inventory into issues or credits to such storeroom stocks for a period.

Where, as in some classes of business, **quantities** are accounted for, as pounds, barrels, tons, gallons, etc., turnover may be on a unit basis instead of in values.

TURNOVER ANALYSIS.—The following is also adapted from material supplied by Bliss:

The measure for turnover of stocks should be applied to **different classes of stocks,** such as finished goods, work in process, raw materials, supplies, etc., also to stocks carried by individual departments, plants, branches, etc., in order to determine that no channels are obstructed. The more detailed the computation of turnovers, the more effectively are sore places which tie up capital pointed out. As a rule, **turnover should be figured as a relation of average inventory to cost of sales.** Each line of business has its own turnover standards. Competition to a large degree determines turnover in any line. To realize average results on investment, a business should realize average turnovers. Rapidity of turnover has a definite bearing on the margin on sales which must be earned to cover costs of doing business and yield adequate return on capital.

Few organizations appreciate the cost to carry stocks, and fail to figure the advantages of a more rapid turnover or the disadvantages of a slow one. Each line of business has a **normal period** of turnover. Advantages of a rapid turnover are illustrated as follows:

A concern carries an inventory of................	$100,000
It has a net worth of..........................	$150,000
Its average turnover is........................	3 times per yr.
Its average turnover should be..................	4 " " "
If turnover were increased to 4 times per year on same volume, amount of invested capital would be cut by ¼ or..........................	$25,000
Saving on interest cost on this item is............	8%
which is 1.33% on stockholders' investment, as **added net profits.**	

This leaves out of consideration certain additional advantages: smaller liabilities, less spoilage and obsolescence, less insurance, space rentals, taxes, etc.

The following table from Bliss shows **average turnovers** realized by representative corporations in various industries, and shows tendency toward slower turnovers in depression years, 1920 and 1921:

Average Turnover of Inventories of Representative Corporations in Various Industries.[4]

	95 Cos. 1916–1921	57 Cos. 1914–1921
1914	$....	$4.43
1915	....	4.64
1916	4.78	5.08
1917	4.47	4.73
1918	4.47	4.74
1919	4.09	4.25
1920	3.77	3.96
1921	3.52	3.59
Average for full period	$4.21	$4.42

Wide variation in turnover between different industries is shown in following comparison:

Most Rapid Turnovers:		
Slaughtering and meat-packing	$7.48	sales yearly per $1 of inv.
Retail chain stores	5.93	" " " " " "
Chemical products manufacturing	5.42	" " " " " "
Iron and steel manufacturing	5.02	" " " " " "
Slow Turnovers:		
Leather products manufacturing	1.55	" " " " " "
Tobacco products	1.77	" " " " " "
Machinery manufacturing	2.16	" " " " " "
Rubber and tire manufacturing	2.79	" " " " "

Bases of Inventory Valuation

THE ACCEPTED RULE.—The accepted axiom of accounting and business practice is to value inventories at "cost or market, whichever is lower." Certain variations from it are desirable under abnormal conditions, such, for example, from 1916 to 1921, inclusive. At the end of the year 1919, many concerns disregarded the rule "cost or market, whichever is lower," and used still lower prices, basing their action on the belief that the long period of inflation was near its close. This proved true. Prices reached their highest point in May, 1920. At the close of the year 1920, there was a tendency to ignore again the customary rule and to value inventories at cost or market, whichever was higher, and other variations were frequent.

Generally, where there are no substantial changes in cost and selling prices, cost is proper basis of inventory valuation. Under such conditions income accounts are not affected by quantity of unsold goods as shown in the inventory, and the balance sheet shows current values. When there are substantial variations in prices, valuation of inventories at cost may lead to the misstatement of the income of any two given periods affected by such valuation. Under such conditions balance sheets become misleading, failing to reflect current values.

If inventories are reduced to a market basis, they should be reduced to such a figure that as they are carried forward into the subsequent period and sold, a normal gross margin of profit will be realized. If a loss is known to exist in an inventory, it is usually desirable to take it. Carrying stocks into a subsequent period at such a price that when sold they will not yield a normal gross margin sufficient to cover expenses and realize a return on the investment, is carrying forward a loss.

[4] Expressed in yearly sales per $1 of inventory.

In manufacturing operations difficulties frequently arise in the application of the customary rule.

Reduction of the inventory may be accomplished in either of two ways:

1. **Actual inventory prices** on all items may be reduced, these reduced figures thereafter being regarded as the cost.
2. A **general or inventory reserve** may be created, setting up the amount of the shrinkage in a general account, which is deducted from the inventory account in the balance sheet. The inventory sheets stand at cost values. Cost of figuring subsequent periods will be based on actual cost, not upon reduced or market values.

Choice of method requires careful consideration. To adjust by setting up a reserve requires only the pricing of the inventory on two bases: actual cost and reduced or market basis. The difference in total between the cost and market basis is the amount of shrinkage to be cared for by the reserve. When this method is used and individual costs of materials remain unchanged, the cost of figuring the subsequent period is based upon actual cost of material and may be so out of line with existing market conditions as to be misleading rather than advantageous.

If costs on the basis of reduced inventory valuations are advisable, it is necessary to reduce actual cost of materials throughout all detailed records, to refigure costs of work in process and finished goods, and to compute all costs in the subsequent period on the basis of the new inventory valuations. The latter procedure involves much detailed work. Yet the point is worth consideration because it means the difference between cost on an actual cost basis and cost on a reduced or market basis for use by executives in handling business in subsequent periods.

If a **general inventory reserve** is set up the difference between cost and present valuation should be taken care of by means of a journal entry charging Surplus and crediting Inventory Reserve for the difference. Thus, if original cost as shown by inventory sheets is $125,000, the following entry is necessary:

Surplus....................................	$25,000	
Reserve for Decline in Inventory Values......		$25,000

In the balance sheet this reserve is preferably shown on the credit side, but conditions may make it desirable to deduct it from the inventory before latter is brought on the balance sheet. When in the following period, the goods to which this inventory applies are sold, Reserve for Decline in Inventory Values should be closed into Surplus.[5]

INVENTORY RESERVE ILLUSTRATED.—Establishment of inventory reserve is illustrated by the procedure followed by U. S. Steel Corp. Acting upon the changing status of price levels, this company, at the close of the year 1916, set up an inventory reserve of $13,524,794 against an inventory which, taken at cost or market, amounted to $195,425,798. The reserve represented the excess of cost or market above normal prices. At the end of 1917, this reserve was increased to $30,270,670 against an inventory valuation of $253,938,756. At the end of 1919, it stood at $90,000,000 against an inventory of $316,796,678. At the end of 1920, it stood at $95,000,-000 against an inventory of $353,363,497. At the end of 1921, it stood at $60,710,255 against an inventory of $302,214,624. In the balance sheet

[5] For further discussion see article by R. E. Booth in *Administration*, July, 1921, pp. 96–97.

of U. S. Steel Corp. as at Dec. 31, 1921, the item of inventories is expressed as follows under general head of "Current Assets."

> Inventories, less credit for Reserve and for amount of inventory values representing Profits earned by subsidiary companies on Intercompany sales of products on hand in Inventories December 31, 1921 .... $241,504,369.79

The U. S. Steel Corp. inventories, before allowing for reserve described above, were determined on the basis of actual purchase or production cost of materials to the respective subsidiary companies holding them (unless such cost was above the market value on Dec. 31, 1921, in which case the market price was used), except that in respect of such commodities in stock at the close of the year as had been purchased by one subsidiary company from another, there is excluded the approximate amount of profits in such sales price which had accrued to the subsidiaries selling the same or furnishing service in connection therewith.

In connection with a **reserve for depreciation of merchandise inventories,** the following three points should be kept in mind:

1. **The reserve should not be cumulative,** as is the case with reserves for depreciation of fixed assets. A reserve set up against an inventory applies to that inventory only and should be dropped when a new inventory is taken. If the inventory at Dec. 31, 1921, is $100,000, a 5% reserve against this inventory has a credit of $5,000. If at Dec. 31, 1922, the inventory is only $80,000, the reserve should be $4,000. If at Dec. 31, 1923, the inventory is $120,000, the reserve should be increased to $6,000. The reserve thus always stands at 5% of the inventory when the books are closed.

2. **The reserve should be set up by a charge to Surplus,** not to Profit and Loss. If the inventory is priced at cost or market, whichever is lower, and if accrued deterioration is allowed for in valuing the goods, all elements affecting the current operations of the period will thereby have been taken into consideration.

3. **On the balance sheet,** the reserve should be so placed as to be easily recognized as an appropriation of surplus as a conservative provision for losses which may possibly occur, instead of as a deduction from an asset on account of losses which have already taken place. Special conditions, however, may make it desirable to show the inventory net, thus avoiding disclosure of the amount of the reserve on the balance sheet. Since the war conditions were abnormal the declining inventory values of that period were a proper charge to Profit and Loss rather than to Surplus.

In addition to reserve for reduction in inventory valuations, **inventory reserves** may be set up for:

1. Provision for discounts in inventories.
2. Provision for interdepartmental profits in inventories.
3. Provision for intercompany profits in inventories.
4. Provision for interest in inventories.
5. Other inventory adjustments.

In the balance sheet these reserves ordinarily should be shown as deductions from asset accounts, since they represent working capital adjustments. An alternative plan is to reduce actual items in the inventory; and this is sometimes necessitated by operating conditions.

COST BASIS.—Under this basis certain considerations arise. If by cost is meant actual cost, certain difficulties of a technical nature must be overcome. Unless all stock on hand was acquired at a single cost price—a con-

dition not likely to exist—actual cost of the goods at the end of any given accounting period can be ascertained only when it is possible to identify each item of stock in terms of lots purchased; in other words, to make this plan successful it is necessary to devise a system of marking whereby each item in the inventory can be identified. In many cases this is impracticable. Usually "cost" is an estimate which may involve serious error. One expedient is to take the **arithmetic average** of invoice prices. This may be worked out by making use of the prices of all lots purchased during the current period and also including the price used in valuing the last preceding inventory. Sometimes the average is computed only from purchase prices for the period. Sometimes the prices of representative lots are averaged. Such computations are based upon the assumption that all lots purchased are equal in amount—which is likely to be a serious error.

This error may be overcome by employing a **weighted average** of prices, thus giving influence to the various sizes of lots purchased. The initial inventory and total purchases, with respect to both quantity and value, should be taken into consideration. This plan is based upon the assumption that the goods sold are taken from the lots purchased in proportion to the original amounts of these lots. In fact, this assumption is almost invariably untrue, because goods are not sold in proportion to the quantities in the various lots purchased.[6]

When it is not necessary to determine **literal cost** it is possible to follow a plan based upon the assumption that the goods sold are taken from the oldest in stock and therefore the goods on hand are the most recently purchased. This plan may be carried out by arranging the invoices in chronological sequence and, beginning with the most recent, taking off figures for both quantity and value until a quantity total is secured which is equivalent to the physical inventory—the corresponding value total then gives the value inventory.

Although the above scheme will not usually correspond with the actual facts, it has received the sanction of the Treasury Department and has some justification from the economic side. It is only relatively recent prices that are of interest to the management, and these are the ones employed under this plan. The following advantages are cited in its favor:

1. It exhibits **cost.**
2. The inventory value is drawn from the **actual records** in a simple yet systematic way.
3. It conforms to sound business principles.
4. It is based on a reasonable assumption regarding the movement of goods.

When to Use Cost Basis.—Most inventories taken on a cost basis represent cost only in a nominal sense, because the true cost of each unit is often difficult or impossible to secure. The various devices which may be used almost invariably give different results.

There is one condition under which cost is indubitably the correct basis of inventory valuation even though market may be lower. This is when selling price is not affected by a drop in the market. Thus, an inventory of raw material used in a printing plant should be taken at cost because selling prices of output are based on cost, and are not affected by the market prices of raw materials.

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[6] W. A. Paton, Inventory Valuation, *Administration*, Mar., 1922, pp 291–302.

There are two conditions under which it is proper to value inventories at cost even though cost is higher than market, viz., when:

1. **Basic or staple commodities** are temporarily quoted at less than normal production cost.

2. **Raw materials** or other **commodities** have been purchased at prices higher than those existing at the closing date, and such purchases are allocated to contracts not subject to cancellation, the contract price being based on the high cost of such raw materials.

MARKET BASIS.—The chief advantage of market price—or, as it is sometimes termed, **replacement cost**—in inventory valuation, is its simplicity and ease of application. The value of the inventory is secured by multiplying the physical units in the inventory by the latest reliable market quotations. This method does not ordinarily give results widely different from those secured by using the cost basis figured on the most recent acquisitions up to the amount of the inventory. An investigation carried out by the Bureau of Internal Revenue in 1919 disclosed the fact that in certain lines of manufacture this plan of inventory valuation is much favored.

"COST OR MARKET, WHICHEVER IS LOWER" BASIS.—This is a combination of the two described above. It has been adopted by the Bureau of Internal Revenue as one of the two alternatives—the other being cost—and was recommended by a committee of accountants which reported to the British Board of Trade in 1917. It is favored by many professional accountants.

This method introduces a double standard of valuation, and in taking an inventory on this basis it is necessary to provide three columns. In column 1, market prices are placed. In column 2, cost prices are placed, and in column 3 the lower of the two figures, cost and market, are placed for each item. It is, of course, permissible to price by groups.

For the manner of determining cost under this plan, see above discussion, and Regulations 62, issued by the Treasury Department.

The **method of determining market value,** as prescribed by Regulations 62, is analyzed as follows:

1. Market means current bid price prevailing at date of inventory for the given merchandise in the volume in which it is ordinarily bought by the taxpayer.

2. When open market quotations are not available, the taxpayer must use such evidence of fair market price at date or dates nearest the inventory as are available. These might be specific transactions in reasonable volume entered into in good faith, or compensation paid for cancellation of contracts for purchase commitments.

3. Where, because conditions are abnormal, the taxpayer has regularly sold such merchandise at prices below the current bid price as above defined, the inventory may be valued at such prices and the correctness of such prices will be determined by reference to the actual sales of the taxpayer for a reasonable period before and after inventory date. Prices which vary materially from actual prices thus determined are not accepted as determining the market.

4. Goods in process of manufacture may be valued for purposes of the inventory on the **lowest** of the following bases:

(a) Replacement cost prevailing at end of fiscal year.
(b) Reproduction cost prevailing at end of fiscal year.
(c) Proper proportionate part of actual finished cost.

(d) Under abnormal conditions, the proper proportionate part of sales price of finished product.

Account should, of course, be taken in all cases of the proportionate part of the total cost of basic elements (materials, labor, and indirect) represented in goods in process of manufacture in the stages in which they are found as at the end of the fiscal year.

The definitions, 1, 2, 3, and 4 above, given for determining market value, apply to the following:

1. Materials and supplies purchased and on hand as at the end of the fiscal year, in the same condition as when purchased.
2. Goods in the process of manufacture as at the end of the fiscal year.
3. Finished goods on hand as at the end of fiscal year.

According to Article 1584 of Regulations 62, column 2 of the inventory—market price—may be subdivided into four columns in order to ascertain which is the true or lowest market, as follows:

1. Replacement cost.
2. Reproduction cost.
3. Proportionate part of acutal finished cost.
4. Proportionate part of sales price of finished product.

The chief difficulty in the application of these principles arises not in the figuring of market for materials or goods or supplies purchased by the taxpayer, but in figuring market for goods in process of manufacture and of finished goods. As they apply to these, the provisions of Article 1584 are as follows:

(a) Those **not contracted** to be delivered **on firm sales contract** at fixed prices entered into prior to the end of the fiscal year, may be figured at the lowest of:

1. Replacement cost.
2. Reproduction cost.
3. Proportionate part of actual finished cost.
4. Under abnormal conditions the proportionate part of sales price of finished product.

(b) Those **contracted** to be delivered **on firm sales contract** at fixed prices entered into prior to the end of the fiscal year may be figured at the lowest of:

1. Replacement cost.
2. Proportionate part of actual finished cost.
3. Under abnormal conditions the proportionate part of sales price of finished product.

SELLING PRICE BASIS.—Selling prices are used in two ways in inventory valuation. Current selling prices may be taken as a starting point from which, by working backwards and making certain deductions, a figure is secured which is a kind of cost figure. In T. D. 3058 the Treasury Department authorizes retail dry goods dealers to take inventory by the "retail price" method. This plan consists in the computation of the cost of stock by deducting a "purchase mark-up" percentage from the estimated selling value of goods on hand. A manufacturer of pharmaceutical supplies values his inventory by means of a formula designed to reduce selling value by estimated costs plus estimated profit.

The **alternative use** of selling price in inventory valuations is its direct application to the physical inventory to secure its value. Accountants object to this method because it anticipates profit. There are, however,

certain instances in which selling price may be employed, as, for example, where finished goods are made to order on a binding contract, and, perhaps, where the fabrication process is very long. The Treasury has permitted farmers to value unsold produce at sales price less marketing costs. Again, selling price may be taken as a basis if it requires no great effort or if the sale is a foregone conclusion. Whether or not such a condition exists or can exist must be determined upon the facts. The impossibility of determining cost may also justify the use of selling price or some figure based on it.

As a general rule, selling values must be rejected as a basis for inventory valuation, because ordinarily a profit can be made only when a sale is consummated. Moreover, selling prices may decline greatly between the date of taking the inventory and the date of sale, so that there is no logic in the use of the selling price as at the inventory date except under the special conditions mentioned above.

BASE STOCK BASIS.—Some manufacturers carry basic raw materials through the accounts at fixed and perhaps arbitrary prices. This plan has simplicity in its favor, but it is subject to criticism for the reason that balance sheets based on such valuations are misleading. Some concerns which adopted the plan at the beginning of the World War have concluded that their procedure was justified by the results.

INVENTORIES BASED ON SELLING VALUATIONS—GROSS PROFIT TEST.—Department stores and certain other lines of trade follow the practice of taking inventories at selling prices and then deducting from the aggregate a certain percentage in order to arrive at an estimate suitable for balance sheet purposes. This method is illustrated as follows:

Sales	$292,000
Closing inventory (selling valuation)	50,000
	$342,000
Less: Opening inventory (selling valuation)	37,000
Selling valuation of purchases	$305,000
Less: Purchases at cost	227,469
Mark-up (25.42% of $305,000)	$ 77,531
Closing inventory (selling valuation)	$ 50,000
Less: Mark-up (25.42% of $50,000)	12,710
Closing inventory (balance sheet value)	$ 37,290

The process may also be expressed in the form of a proportion, as follows:

305,000	:	227,469	::	50,000	:	X
Selling valuation of purchases.		Purchases at cost		Closing inventory at selling valuation.		Closing inventory at cost valuation.

$$X = \$37,290$$

The following description of the "gross profit test" appeared in the *Journal of Accountancy*, Mar., 1921 (p. 225):

Stock on hand may be estimated at dates between the taking of physical inventories by applying the gross profit method. The rate of gross profit on sales since the last inven-

tory may be estimated on the basis of the rate of gross profit earned on sales in prior periods. Any changes during the period in the cost or selling price of merchandise would have to be taken into consideration in estimating any probable variation between the rate earned in prior periods and the rate earned in the current period. The sales since the date of the last inventory would be multiplied by this estimated rate of gross profit to determine the estimated gross profit on the goods sold. Then the sales minus this estimated gross profit would be the estimated cost of goods sold since the last inventory. The opening inventory plus the purchases, freight, and other additions to the cost of goods, minus the estimated cost of goods sold, would give the estimated inventory.

The **retail inventory system** is described as follows by T. L. Blanke, Director of the Bureau of Accounting and Control of the National Retail Dry Goods Association:

The system enables the merchant to know what his stock of goods on hand is at the close of each day, week, month or year, or any other period, for each department in the store, and he thereby is able to control his investment. An efficient control of the stock not only saves money on the money invested, but, what is of much greater financial importance, helps in the avoidance of depreciation of goods on hand and in maintaining up-to-date merchandise.

Under this system of inventory accounting, the merchandise is charged to the various departments on the books of account at the retail or selling price and also at cost. These cost and retail values are accumulated for the year by periods and the percentage of mark-up is arrived at by deducting the total cost from the total retail values and dividing the result by the accumulated retail figures. The retail value of the inventory at the close of any period is arrived at by deducting the sales and mark-downs taken on the original selling price from the accumulated retail values. The cost value of the goods on hand is then computed by subtracting from 100%, the percentage of purchase mark-up, the remainder being the percentage of cost. Multiplying the retail value of goods on hand by this latter percentage gives the value of the inventory at cost. **Physical inventories** are taken at the close of the year at the retail values and the book figures are adjusted to them.

The **percentage of mark-up** on merchandise must be sufficient to cover the cost of salaries and other operating and administrative expenses, receiving and delivery costs, mark-downs, inventory losses of all kinds and a net profit for the business. That a net profit is not always realized is shown by the fact that the average net profit for all stores reporting in 1921 was less than one cent for each dollar's worth of sales.

The system is very easily installed and operated, and it has been found entirely practical for the small as well as the large stores. It has been approved by the Treasury Department, through the Bureau of Internal Revenue, and is being installed by all the leading public accountants of the country. There is no question that the system actually saves the retailer many thousands of dollars annually. The president of one of the largest metropolitan stores recently said that it would increase his operating expenses fully $600,000 a year to go back to the "cost" system of taking inventory, while a somewhat smaller merchant stated that the use of the "cost" system would increase his expenses more than $200,000. It is therefore as important to the consumer that the retailer should be efficient in his accounting methods as it is to the retailer himself.

What are the **advantages** of this system that enable the merchant to make this saving? In the first place, it furnishes a definite and reliable basis for the taking and valuing of stock for financial statement purposes. This is of vital importance to the banker and broker when passing upon the financial statement of a client. It is, therefore, of direct benefit to the retailer himself in that it establishes greater confidence in his financial ability, making borrowing easier and on more liberal terms.

The inventory system is accurate in the results that it shows. The Internal Revenue Bureau has accepted it because of the fact that the book figures are accurate and easily verified. The complete records of every step from the purchase of items to their final disposition by sale are readily checked. It is almost impossible to do this under the cost system. The natural result is that those who use the retail inventory method have substantiating evidence of their actions, while those without it may be subject to some adjustments by tax officials, which may be felt to be unjust, but, from lack of evidence, they will probably suffer.

Furthermore, the fact that accurate inventory values are available at all times makes the system particularly valuable from an **insurance standpoint**. The records will show at

any time just what the amount of stock is in each department, so that a store can carry sufficient insurance, but will not carry excess amounts, thus incurring unnecessary expense.

In addition, this method provides **an efficient check** in dollars and cents as between book and physical inventories at retail, **without the use of percentages.** If large differences are found to exist between the two, the work can be rechecked and errors corrected. It will disclose inventory padding on the part of those handling the stock. If a buyer should report an inventory at retail higher than the book inventory, it would be sufficient grounds for believing that he was attempting to increase profits by inflating the stock. This is especially true where the buyer is receiving a bonus based upon earnings.

Through its use **merchandise stocks may be controlled.** Unless the merchandise manager knows at least once a week the amount of stock in each department, the size of the inventory or the stock turnover cannot be controlled. Time is saved at the close of the fiscal period or at any time when the physical inventory is taken. With this system in operation, it is necessary to take the inventory at retail only, thus eliminating the chances of errors through the copying and decoding of cost marks. . . . Not the least of its advantages is that it provides for a complete monthly operating statement, making it possible to issue an accurate profit and loss statement for the business as a whole, as well as for each individual department. The figures affecting the gross profit being available at all times, unnecessary waste can be prevented through the elimination of losses that would not otherwise be discovered until the close of the year.

Miscellaneous Provisions

INVENTORIES PLEDGED AS COLLATERAL.—When merchandise is pledged as collateral, it is important that the amount so pledged be set up as a separate item in the balance sheet, or that some kind of reference be made to it. Likewise, the liability incurred to creditors who have advanced money on such security should be shown separately, and a contra reference made to the pledged merchandise shown on the asset side of the balance sheet.

PROFITS IN INVENTORIES OF AFFILIATED COMPANIES.—Where one affiliated company sells goods to another affiliated company at an advance over cost, there results an increase in the value of inventories due to the taking of a profit on intercompany sales. It has been said that inventories of affiliated companies should be expressed at cost,[7] even though in such cost there is an element of intercompany profit, but it is now the definitely settled practice of accountants to reduce inventories by the amount of profits earned by affiliated companies on intercompany sales of products included in the closing inventory. These profits are not carried into currently reported earnings of the consolidated organization until converted into cash or a cash asset to the company. The following note appears immediately below the surplus division of the balance sheet of the U. S. Steel Corp.:

> That part of the Surplus of Subsidiary Companies representing Profits accrued on sales of materials and products to other subsidiary companies and on hand in latter's Inventories is, in this Balance Sheet, deducted from the amount of Inventories included under Current Assets.

If it is not possible to ascertain actual figures of intercompany profits in inventories, an estimated reserve should be set up to exclude approximate amount of profits resulting from intercompany sales.

In some cases it may be inappropriate to assume average profits in such inventories. Under these circumstances, if inventories are valued conservatively, there can be no objection to permitting such element of profit to remain in the inventories.

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[7] *Journal of Accountancy*, Dec., 1915, pp. 470–471.

FREIGHT-IN AND STORAGE.—Freight-in and the expense of unloading are properly regarded as parts of inventory cost. As to the expense of storage there may be some question. If raw material is kept any length of time to permit curing, costs of storing are proper additions to inventory values. If, however, the material or finished goods are placed in storage merely to wait until used or sold and no increase in value results, it is better not to add storage charges to cost of goods. Storage expenses of this kind are rather in the nature of rental costs, and there is no reason for believing that the storage expenses incurred have raised the value of the inventory.

Raw materials inventories are ordinarily taken at cost or market, whichever is lower. Cost should cover invoice price plus freight, duty, insurance, storage, handling, cartage, etc. Market basis is replacement cost based on present purchasing prices. Adjustment required is found by figuring both actual and replacement cost of materials. In case of declines in values, adjust either by a general reserve or by adjusting actual cost figures. The method used has a bearing on costs to be computed on products to be finished in subsequent periods.

INVENTORIES OF MANUFACTURING CONCERNS.—Inventories of manufacturers differ from those engaged in trade, because materials purchased are made to undergo significant alterations in the process of manufacture and take on added increments of value as the result of labor and overhead costs applicable to them. Inventories are, therefore, found in the following three stages:

1. Raw Materials
2. Goods in Process
3. Finished Goods

Finished goods stand in the same relation to the manufacturer as does merchandise to the trader. The elements of cost accumulated by materials as they pass from the raw materials to the finished goods status may be outlined as follows:

1. Raw Material Stage:
   (a) Purchase cost of materials and supplies.
   (b) Freight and cartage inward.
   (c) Cost of handling and storing.
2. Goods in Process Stage:
   (a) Cost of raw materials taken from stores.
   (b) Productive labor cost, which must be allocated to the product on some adequate basis.
   (c) Manufacturing burden, also known as overhead, oncost, and indirect expense. Since this item cannot be allocated to any given unit produced, it must be allocated on some scientific basis.
3. Finished Goods Stage:
   Goods finished are credited to the Goods in Process account and charged to Finished Goods account, which latter corresponds to the ordinary Merchandise account of a trading concern.

INVENTORIES OF GOODS IN PROCESS.—The inventory value of goods in process can be secured by a recapitulation of the cost sheets, provided all elements of cost, materials, labor, and indirect have been brought upon the cost records. It is sometimes customary to apply the indirect to finished goods only; when this is the case the inventory-pricing must be done with

reference to the burden which is applicable to goods in process, or else a special account should be set up for the purpose of containing this unapplied burden. It can then be shown as a deferred charge to cost of manufacture.

DIVISION OF WORK IN PROCESS.—For analytical purposes it is sometimes desirable to make a division of work in process into three parts: **Material in Process, Direct Labor in Process,** and **Burden in Process.** In large plants separate accounts may be kept for each department. When this is done, special attention should be given to **Burden in Process.** Frequently predetermined rates are used, it being presumed that burden in process will equal actual burden. The advantage of this is that it makes possible the compilation of costs in advance of the time when actual burden is known. For each department two burden accounts are kept: **Burden Actual** and **Burden Credit.** To the first, all burden is charged as it accumulates. To the second is credited estimated burden as it is distributed to work in process. A comparison should be made of the two accounts to determine whether the estimated or predetermined rate is large enough to cover actual burden costs.

If desirable to write down inventory of work in process, the costs of material, labor, and overhead should be refigured to determine wherein the change occurs.

INVENTORIES OF FINISHED GOODS.—This is secured by a recapitulation of the cost sheets which refer to job or stock numbers which have not been sold. Goods which are shopworn or out of style should be valued at a price not greater than they can be expected to realize on sale, which, of course, may be much below cost. Finished goods should be valued at cost except in case of firm orders based on contract, in which case it may be feasible to use selling prices less estimated delivery and similar charges. It is better not to regard a sale as completed until delivery has been made and the goods accepted by the vendee. If it is thought best to take the inventory at selling price, the unrealized profit resulting should not be included in current income but be shown separately.

It is possible that to include finished goods in the inventory at cost would be to value them above selling price. This might be the case where a business is being run on an extravagant basis and costs are excessive. In such instances market price should be made the basis of valuation.

When reducing such inventories to a market basis, either use a reserve or write down the actual cost figures. If costs have a bearing on selling policies and prices, it is advisable to write down actual inventory prices, so that statistics of a subsequent period will be based upon the reduced costs.

If by such market basis is meant present replacement, figure costs on basis of present market for material, supplies, labor overhead, etc. Naturally, greater change may occur in one of these elements than in another.

INVENTORIES OF SCRAP MATERIALS.—Market is the usual basis, allowance being made for selling and marketing costs yet to be incurred. Scrap or by-product remains part of prime operations until it is processed into its first marketable stage. Profit realized up to that point belongs to the major operation. In figuring cost of major product, figure value allowed for scrap on by-product backwards from value of by-product in its first marketable stage, by deducting expenses necessary to put it in marketable form and to dispose of it. After such products reach their first marketable stage, any operations preformed are allied industries, and profits realized thereafter should be considered as earnings of such allied industries. These allied industries should be charged with by-products from major operations

at full market value. Therefore, the rule should be to inventory scrap or by-products at market until transferred to the allied industry. Thereafter inventory should be on basis applicable to operations of the allied industry.

INVENTORIES OF SUPPLIES AND REPAIR MATERIALS.—Value of these is cost or market, whichever is lower. If market is lower and a reserve is used, the reserve to be set up is the difference between cost and market. Reserve should or should not be used according as operations are or are not departmentized, because in former case it is not important that supplies be figured into cost at the reduced value, whereas in the latter case it is, since departments are run on a commercial basis.

INVENTORIES OF RETURNABLE CONTAINERS.—Illustrations are cement sacks, barrels, cable reels, acid carboys, gasoline drums, cracker tins, petroleum drums, tierces, etc. Sometimes these are charged to customers in the invoice and a refund made when returned. Sometimes a separate invoice is sent for them, credit being allowed upon their return. Sometimes merely a memorandum invoice is made out. Oil drums, cable reels, gasoline drums, and floating cooperage should be regarded as fixed assets, and an asset record kept therefor. Charge these at cost and write off depreciation in the usual way. If these are actually charged to customers, credit a reserve which will take care of refunds when they are returned. Periodical examination and adjustment of the account should be made.

Smaller items should be carried as current supplies. If a definite charge therefor is made against the customer, do not include the item in sales but credit a reserve to care for refunds when such retainers are returned.

GOODS OUT ON CONSIGNMENT.—These may be billed at cost, market, or an arbitrary price. They are not sales. If billed at a price above cost, profit is taken before it is realized. In the commercial fertilizer business the product is billed at market price to agents or brokers. At the season's close the accounts are checked up and unsold product ascertained. The account sales at closing date should be secured and the accounts adjusted, the anticipated profit being cared for by a general reserve.

GOODS HELD ON CONSIGNMENT.—The following is quoted from J. H. Bliss:

> An income statement combining the regular business and the consigned business gives a complete picture of the transactions of the period and affords the basis for computing volume and expense ratios. There should be no objections, in such circumstances, to including in inventory of consigned goods billed prices, stating them to be such and showing on the other hand the amounts due to consignor among the accounts payable. In a broader sense, this is the proper method for handling such accounts if the balance sheet is to present a picture of the complete financial structure of the business. The inventory of goods on hand for sale represents capital used in the business, whether they are owned by that business or are there on consignment.
>
> ..The turnover of the business and the relation of the volume of business done to the fixed investment, and the relation of the sales to the accounts receivable, all require consideration of the consignment business, the same as the regular business, if these fundamental relationships are to be correctly expressed. Goods received on consignment are really a source of capital, in that the consignor supplies the investment on which the business is done. In order to get a complete picture of the financial status, such consignments should be taken into consideration.
>
> In some instances materials are consigned for manufacture on a commission basis. Here it seems even more important that such consignments should be taken into the accounts at billed prices and handled from there on in the same manner as owned goods, though of course kept separate. In the figuring of factory costs,.the application of overhead expenses, and measuring of the efficiency of manufacturing operations, it is necessary that these con-

signed stocks be accounted for similar to the owned stocks. Inventories of such stock in process of manufacture or completed should be valued on a basis of the billed price in, plus the manufacturing expenses incurred, except where such expenses exceed the amount of commission and a loss is apparent. In that event, the loss should be taken in a current period rather than carried forward.

The accepted method is as follows: Goods on consignment should be included in the inventory of the consignor, who retains legal title to them until sold by consignee. It may be necessary to include goods owned but not yet received. Goods received on consignment should be excluded from inventory of consignee. Goods not yet unloaded from cars, and therefore not taken into stock, must be so marked that they will not be charged into the next period's purchases and at the same time taken into the current inventory. This may be done by stamping the invoices: "Included in the 19— Inventory."

INVENTORY VALUATION IN DIFFERENT TYPES OF MANUFACTURE.—Three types affecting cost figuring are:

1. Ordinary manufacturing operations.
2. Producing major productions and by-products.
3. Producing joint products.

Ordinary operations consist in putting together or building up materials, labor, and expenses into finished product. It is the common type of manufacturing operation.

Producing major products and by-products involves taking apart or breaking down of some material of known cost into parts, one being a major product, the others by-products. The major product is figured thus:

1. Beginning with known cost of material.
2. Add costs and expenses incurred in operations.
3. Making total outlay for materials and expenses.
4. Deduct therefrom full value of by-products produced.
5. Balance is cost of major product.

Ordinary rule, cost or market, whichever is lower, applies to major products, but only available basis for by-products is market. Their cost cannot be figured because they are joint products arising out of same operations that produce the major product and must be valued on a market basis in arriving at cost of major product.

If such by-products can be identified in processes following the prime operations, they may be valued at original value placed upon them when costs were figured. But if such products are not identifiable in the subsequent processes, only basis of valuation is current market price. Inventory prices for such by-products should allow for selling and marketing expenses, but no allowance should be made for estimated profit on sale of such if full values have been used to figure costs. Effect of using full value to figure cost is to throw profit or loss on entire transaction into major product accounts.

In manufacturing joint products, materials of known cost are taken apart, broken down, but none can be termed a major product. It is then impossible to figure the products singly although the group cost can be ascertained. Cost computing under these conditions is done as follows:

1. Start with known cost of raw material.
2. Add expenses and costs incurred in operations.
3. Making total outlay.
4. Figure total value of all products produced.

5. Compare this with total outlay figured above.
6. Difference is margin of profit or loss realized on operations.

Inventories of such products must be valued on a market basis. The products may be carried at the original valuation in subsequent inventories if they retain their identity; if they do not, current market must be the basis used. It is then advisable to allow for selling and marketing expenses yet to be incurred, and if the items do not lose their identity in subsequent operations or processes, it may be possible to allow for unrealized profit.

DISCOUNTS ON PURCHASES IN INVENTORIES.—Always take **trade discounts** off in pricing inventories. In case of strictly **cash discounts,** it is customary to regard them as financial gains, hence the invoice price should be used. Where, as in case of the clothing and shoe business, discounts run as high as 5% to 10% 10 days, net 30 days, it may be desirable to make deduction for them. When it is found desirable to make an allowance, it is best to set up a reserve. The amount to be allowed is found by applying to the inventories the average rate of discounts realized. Charge a **Discounts Earned account** and credit a **reserve.** At beginning of following period reverse the reserve.

INTERDEPARTMENTAL PROFITS IN INVENTORIES.—These represent unrealized profit and should be eliminated. If transfer is made below cost, an interdepartmental loss occurs, but these arise only when departments are run on a commercial basis, the transfer being at market price. The loss is then taken care of automatically. For interdepartmental profits a reserve should be set up at inventory dates. If, in case of manufacturing concerns, it is not possible to identify products as they pass through the various processes, the profit must be estimated on basis of average margin of profit realized. In case of joint products, inventory basis is usually market price, hence contains a profit or loss. It is impossible to determine the interdepartmental profit in such cases. It is proper to use conservative market prices in such cases.

INVENTORIES OF FIXED ASSETS.—The valuation of fixed assets is based upon different principles from the valuation of merchandise inventories. Here the principle of going concern value is important. Capital is tied up in assets of a permanent character and to dispose of it means the break-up of the enterprise. The market value of such assets as second-hand property could have no influence on a valuation based on going concern values. In general, only two factors need be considered in the problem of the valuation of fixed assets, viz., original cost and depreciation.

GOODS MADE UNDER CONTRACT.—Where goods in process are being manufactured under contract, as in case of extensive construction work, contracts partially completed may properly be given a valuation other than cost. The sale is a foregone conclusion, and it is quite proper that there be included in the inventory the share of profit applicable to work already completed. This plan is especially desirable when the contract is paid for in instalments, the payments being made on the basis of work completed. Thus, some contracts are made on the basis of a fixed price per cubic yard of earth excavated, and so on, a percentage of the total contract price being retained as a guaranty of satisfactory work.

Advances received on contract work are preferably treated as current liabilities, not as deductions from current assets, because if deducted from inventory account, actual amount of capital tied up in goods in process is understated. In this matter, however, it may be desirable to distinguish between advances received on contract work before any of the contract is undertaken,

and those received on contract work where the amount of work performed, plus accrued profit to date, is greater than the amount of the advance.

GOODS HELD IN STORAGE.—Charge costs of carrying against such goods if they enhance their value. Interest may be included if considerable sums are carried for long periods. In preparing a statement of storage operations, interest may be eliminated, as follows:[8]

1. Cost of product in storage.
2. Add expenses:
   Storage charges.
   Handling and delivery.
   Insurance and taxes, etc.
3. Total outlay.
4. Products sold for.
5. Gross earnings after interest charges.
6. Add back book interest charge.
7. Gross earnings before interest charges.
8. Deduct actual interest paid, taxes, and other general expenses.
9. Final results.

Inventories of goods held in storage should be valued at cost plus carrying charges, unless market is lower than cost, in which case the valuation should be made or a reserve set up.

GOODS IN TRANSIT.—Consider goods in transit but not received, and also those received but not passed to stock, as inventories, crediting an **Unaudited Accounts Payable** account. To do this, a suspense entry is necessary. To ascertain goods in transit, use the shipping memos or the invoices of the first weeks of the succeeding period but bearing dates of the preceding period. This sum should be deducted from amount of contracts for purchases outstanding at balance sheet date.

ADVANCE PAYMENTS ON GOODS NOT RECEIVED.—Charge such payments to creditors' accounts in accounts payable ledger. Accumulate such debit items in creditors' accounts and enter in inventory section of balance sheet as advances on purchases not yet received. An alternative plan is to carry a ledger of personal accounts for such advances, charging these accounts as payments are made and crediting them when the invoice is passed. This gives a good control and furnishes a check on the passing of the invoices.

PURCHASE COMMITMENTS.—When contracts are placed, record them as orders outstanding for future delivery, classifying them as to departments or materials, also as to delivery dates. This record is not part of the double-entry system. As goods are received, check them off on this record so that only outstanding commitments can be determined at any time.

Inventory Taking

NEED OF PHYSICAL INVENTORIES.—Physical inventories should be taken to check book inventories, if the latter are kept. If the latter are not kept, physical inventories are essential to the determination of profit and loss. The existence or non-existence of book inventories determines the method to pursue in taking physical inventory. Where adequate stores records exist, the work of taking a physical inventory consists in counting or weighing a

[8] J. H. Bliss.

few items each day and checking them up with the book records. In this way all items may be checked up several times each year. A regular system of checking should be instituted.

It is estimated that when a plant closes one week for taking physical inventory, it loses 2% of its productive capacity.

PROCEDURE IN TAKING PHYSICAL INVENTORY.—Proper preparation for inventory-taking removes many difficulties. The following routine should be followed:

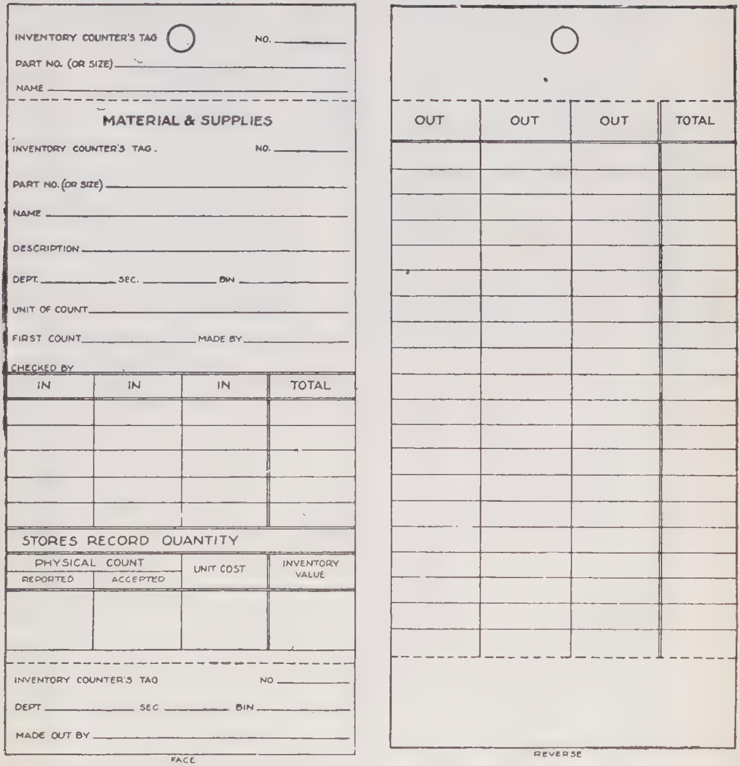
1. Writing and issuing instructions.
2. Making ready the inventory tags.
3. Counting, weighing, and measuring the inventory.
4. Comparing the inventory with the records.
5. Pricing the inventory tags.
6. Extending the inventory tag values.
7. Listing the inventory.
8. Totaling and comparing the inventory with the control accounts.

The instructions, after being clearly worded, should be typewritten or printed. It may be desirable to issue special instructions to each department supplementing the general instructions. The general instructions under (1) above cover such items as: length of inventory period, personnel, items to be inventoried, details of counting.

During time of taking inventory, all operations should cease. Some party should be made entirely responsible for the results secured. All details of procedure should be carefully assigned to the various departments. The **receiving department** should be instructed to clear its floors of all goods up to the "as of" date. Goods received after the "as of" date must not be included in the inventory. The **materials control** department should be instructed to clear up any clerical work connected with requisitions, etc., so that all stock records will be up to date. The **storekeeper** should be instructed to place all stock in orderly arrangement, so as to be ready for counting or measurement. Obsolete material should be discarded. Deliveries on requisition should cease during time of taking the count. The **manufacturing departments** should reduce amount of material on floors to a minimum. All materials entering the **inspection department** before the "as of" date should be forwarded to the stockroom so as to be included in the inventory. The **purchasing department** should reduce the amount of material to be received during period of inventorying as much as possible, also to period preceding, to reduce amount of inventory as much as possible. The **sales department** should supply the accounting department with data as to products billed but not yet shipped, also as to products shipped but not yet billed, to enable proper adjustments to be made. The **accounting department** must calculate all adjustments to be made in the inventory. Frequently this department is given entire supervision over the inventory-taking. If so, it should charge out all tags and inventory sheets as issued and credit them as returned. For this purpose they should be numbered serially. After the tags are priced, they are listed on inventory sheets. The latter are totaled by controls. After adjustments are made, comparison is made of results with general ledger inventory control accounts.

INVENTORY TAG.—Form 12 shows an inventory tag for inventorying materials and supplies. The "in" and "out" columns are for changes in inventory resulting from inward and outward movements when count is made before "as of" date. Tags should be numbered serially. Counts and

measures should be repeated before filling out tags. Note that tag is perforated into three sections. The tags are attached to materials covered by means of wires. Bottom section is torn off and sent to office having supervision. All tags must be accounted for. When all work is completed in a department, main divisions of tags should be torn off, leaving top section



Form 12. Inventory Tag for Raw Material and Supplies (face and reverse)
(From Madison Cartmell's "Stores and Materials Control")

attached to goods. They are sent to supervising officer and compared with duplicates. They are then sorted according to material classifications, and forwarded to materials department for pricing and comparison with stock records. Differences must then be reconciled by recount or adjustment. Pricing is usually at cost or market, whichever is lower. (See "Bases of Inventory Valuations," p. 369). When the price used differs from that used in the stock record, the stock record price should be altered to correspond. Tags are then returned to accounting department for extension, then arranged

PHYSICAL INVENTORY														PAGE NO. ....
.... MATERIAL											PERIOD ENDED			
PHYSICAL COUNT								STOCK LEDGER		DIFFERENCE				
TAG NO.	QUANT.	DESCRIPTION		UNIT PRICE	UNIT	VALUE		QUANT.	AMOUNT	OVER		SHORT		
		Part No.	Name							Quan.	Amount	Quan.	Amount	

FORM 13. Inventory Record for All Materials in Stores
(From Madison Cartmell's "Stores and Materials Control")

INVENTORY										Sheet No.
Department										"COST OR MARKET"
Location						Priced by				
Called by						Examined by				
Entered by						Examined by				
Item No.	Stock No.	Description	Check	Quantity	Unit	At Cost		At Market		Inventory Value
						Price	Extension	Price	Extension	

FORM 14. "Cost or Market" Inventory Sheet

by material control accounts, and listed on inventory sheets. (See Forms 13 and 14.) Final differences between book and physical inventories should be adjusted through profit and loss. Form 14 is a "cost or market" inventory form recommended to the National Association of Upholstered Furniture Manufacturers by J. L. Maltby. It contains columns for both cost and market prices, and an "inventory value" column to which either the cost or market price may be extended, as well as other columns for entering data necessary in taking an inventory.

Accounting Treatment of Inventories

ACCOUNTS TO BE KEPT.—Certain accounts must be kept in connection with the recording of purchases, sales, and other merchandise transactions. The most important of these are: Purchases, Sales, Returned Purchases, Returned Sales, Rebates and Allowances on Purchases, and Rebates and Allowances on Sales. Formerly the practice was to keep a Merchandise account which was charged with purchases, returned sales, and rebates and allowances on sales, and credited with sales, returned purchases, and rebates and allowances on purchases. This plan proves impracticable, however, for the reason that the same account is made the receptacle for both purchase and sale prices, with the result that the balance of the account is not significant. The function of these accounts is illustrated below. Assume that the transactions cover one year, 19—, and that the inventory of merchandise on hand on Dec. 31, 19—, is $25,000.

Merchandise Inventory

19—		19—	
Jan. 1	$ 20,000	Dec. 31 Purchases	$ 20,000
Dec. 31	$ 25,000		

Purchases

19—		19—	
Dec. 31 (For year)	$ 93,000	Dec. 31 Retd. Purchases	$ 3,000
Freight-In	700	Pur. Rebates and Allow.	400
Inventory Jan. 1	20,000	Inventory Dec. 31	25,000
		Profit and Loss	85,300
	$113,700		$113,700

Freight-In

19—		19—	
Dec. 31 (For year)	$ 700	Dec. 31 Purchases	$ 700

Returned Purchases

19—		19—	
Dec. 31 Purchases........	$ 3,000	Dec. 31 (For year)........	$ 3,000

Rebates and Allowances on Purchases

19—		19—	
Dec. 31 Purchases........	$ 400	Dec. 31 (For year)........	$ 400

Sales

19—		19—	
Dec. 31 Returned Sales....	$ 450	Dec. 31 (For year)........	$125,000
Sales Rebates and Allow...........	340		
Profit and Loss....	124,210		
	$125,000		$125,000

Returned Sales

19—		19—	
Dec. 31 (For year)........	$ 450	Dec. 31 Sales............	$ 450

Rebates and Allowances on Sales

19—		19—	
Dec. 31 (For year)........	$ 340	Dec. 31 Sales............	$ 340

Profit and Loss

19—		19—	
Dec. 31 Purchases........	$ 85,300	Dec. 31 Sales............	$124,210

PRINCIPLES GOVERNING CLOSING OF ACCOUNTS.—There must be a clean break in the accounts at some point as inventories are taken. Everything included in the inventory must have a bill passed for it, either actual or memorandum, or a suspense entry should be made putting the charge into the accounts. Also, products shipped must be billed. Those

waiting shipment, if excluded from inventories, must be invoiced, or, if included in inventories, should not be invoiced. At both the receiving and the shipping end a clean break must be made in both the accounts and the inventory-taking, and it must be at the same point in the transactions.

In some cases everything received may be inventoried, suspense entries being passed for items for which invoices have not been received. In other cases it may be better to inventory only goods received, checked, and passed to stock, and for which invoices have been passed. Afterward a general or suspense entry should be made for goods received or in transit but not yet checked and for which invoices have not been passed.

The inventory at the beginning of the year is transferred from the Merchandise Inventory account to the Purchases account, debit side, while the inventory at the end of the year is transferred to the debit side of the Inventory account and to the credit side of the Purchases account. This leaves the Inventory account standing with a debit balance equal to the new inventory. The procedure may be varied considerably from the above. Thus inventories, purchases, and sales may be carried to a Merchandise account and the balance of this, known as gross profit, carried to Profit and Loss. Whichever procedure is followed, the final result is the same.

INVENTORIES IN THE BALANCE SHEET.—Inventories of merchandise in case of trading enterprises, and of raw materials, goods in process, and finished goods in case of manufacturing concerns, should be included among the **current assets,** because they are in process of being turned into cash in a comparatively short time. The length of time required to accomplish this conversion is not material so long as that is the purpose kept in view. Inventories of this type should not be included among working assets, because these are consumed in the operating process. The U. S. Steel Corp., the International Harvester Co., the Packard Motor Car Co., and many others include their inventories of merchandise, raw materials, goods in process, and finished goods among current assets.

There are certain other items in the nature of inventory accounts which in preparing balance sheets are commonly grouped with inventories, but should appear as separate items. Among these are:

- Consigned goods out for sale
- Advances received on consigned goods (credits)
- Stock in storage
- Advances on goods not received
- Stocks of goods in foreign countries
- Goods in transit
- Inventory reserves (credits)

Responsibilities of Auditors

ENGLISH AND AMERICAN SITUATIONS COMPARED.—In the United States most certificates found in connection with balance sheets in corporation reports indicate that the auditors made careful examinations of the inventories. Sometimes the auditors qualify their statement by indicating that the accuracy of the inventory figures has been vouched by responsible officials of the company. Sometimes auditors state in their certificates that they do not take upon themselves any responsibility for inventory valuations.

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[9] 2 Ch. Div. 279 (1896).

In the English case, *In re Kingston Cotton Mill Co.*,[9] it was held that an auditor is not a valuation expert, that he is not required to take stock, that in the absence of suspicious circumstances he may rely upon the assertions of the corporation officials, but that if he accepts their certificate as to the value of the inventory of stock-in-trade, he cannot be held guilty of negligence. This does not represent the situation as it exists in this country, however, for here the auditor regards stock-taking as a matter which cannot be neglected or left entirely to the officials of the corporation to determine.

TWO CLASSES OF VERIFIED STATEMENTS.—An investigation carried out by the Federal Trade Commission has shown that verified statements may be divided into two classes:

1. Those in which the certificate is based on an examination of the books without personal supervision of inventories and independent appraisal of all assets with the aid of technical appraisers.
2. Statements verified with the personal supervision of inventories and independent appraisal of all assets.

MEMORANDUM OF FEDERAL RESERVE BOARD.—Probably 90% of statements certified by public accountants fall within the first class. It is desirable, however, that the accounting profession standardize their audit procedure regarding inventories in so far as possible. With this in view the Federal Reserve Board, after conferences with representatives of the Federal Trade Commission and the American Institute of Accountants, has accepted a memorandum applicable to balance sheet audits, in which 27 points are mentioned regarding inventories. That portion of the memorandum which treats of inventories is reproduced below:

Under this caption must be included only stocks of goods owned and under control of the owner. Stocks are often hypothecated and if this is the case the fact should be stated on the balance sheet.

Inasmuch as the accuracy of the profit and loss account is absolutely dependent upon the accuracy of the inventories of merchandise at the beginning and end of the period under review, this part of the verification should receive special attention. When a balance-sheet audit is being made for the first time, the inventory at the beginning of the period should receive as much attention as that at the end, and the auditor should take every precaution to satisfy himself that both inventories were taken on the same basis.

An acceptable program of audit for inventories is as follows:

(1) Secure the original stock sheets if they are in existence and carefully test the typewritten copies with them and with tickets, cards, or other memoranda that show the original count.

(2) See that the sheets are certified to or initialed by the persons who took the stock, made the calculations and footings, and fixed the prices, and satisfy yourself that they are dependable and responsible persons. Obtain a clear and detailed statement in writing as to the method followed in taking stock and pricing it; also a certificate from a responsible head as to the accuracy of the inventory as a whole.

(3) A thorough test of the accuracy of the footings and extensions should be made, especially of all large items.

(4) The inventories should be compared with the stores ledger, work in progress ledgers and finished product records and stock records as to quantities, prices and values, and any material discrepancy should be thoroughly traced.

(5) Where stock records are kept and no physical inventory is taken at the time of the audit, ascertain when the last physical inventory was taken and compare it with the book records. If no recent comparison is possible, select a few book items of importance and personally compare with the actual stock on hand.

(6) Where no stock records are kept, a physical inventory should be taken preferably under the general direction of the auditor. After the inventory is completed, he should apply the same tests to verify its accuracy as if the inventory had been taken before his arrival upon the scene.

(7) When the cost system of a company does not form a part of the financial accounting scheme there is always a chance that orders might be completed and billed, but not taken out of the work in progress records. Especially is this the case when reliance is placed on such records to the extent that a physical inventory is not taken at the end of the period to verify the information shown therein. In these cases the sales for the month preceding the close of the fiscal period should be carefully compared with the orders in progress as shown by the inventory, to see that nothing that has been shipped is included in the inventory in error. Cost systems which are not coordinated with the financial accounts are unreliable and frequently misleading. Special attention should be called to every case in which the cost system is not adequately checked by the results of the financial accounting.

(8) Ascertain that purchase invoices for all stock in luded in the inventory have been entered on the books. Look for postdated invoices and give special attention to goods in transit.

(9) See that nothing is included in the inventory which is not owned but is on consignment from others. If goods consigned to others are included, see that cost prices are placed thereon, less a proper allowance for loss, damage, or expenses of possible subsequent return. This does not include goods at branches, as the valuing of such stocks will be governed by the same principles as apply at the head office.

(10) Ascertain that nothing is included which has been sold and billed, and is simply awaiting shipment.

(11) If duties, freight, insurance, and other direct charges have been added, test them to ascertain that no error has been made. Duties and freight are legitimate additions to the cost price of goods, but no other items should be added except under unusual circumstances.

(12) As a check against obsolete or damaged stock being carried in the inventory at an excessive valuation, the detailed records for stores, supplies, work in progress, finished products, and purchased stock in trade, should be examined and a list prepared of inactive stock accounts, which should be discussed with the company's officials and satisfactory explanations obtained.

(13) The auditor should satisfy himself that inventories are stated at cost or market prices, whichever are the lower at the date of the balance sheet. No inventory must be passed which has been marked up to market prices and a profit assumed that is not and may never be realized. If the market is higher than cost, it is permissible to state that fact in a footnote on the balance sheet.

(14) It may be found that inventories are valued at the average prices of raw materials and supplies on hand at the end of the period. In such cases the averages should be compared with the latest invoices in order to verify the fact that they are not in excess of the latest prices, and also with the trade papers, when market prices are used, to see that they are not in excess of market values.

(15) Make an independent inspection of the inventory sheets to determine whether or not the quantities are reasonable, and whether they accord in particular instances with the average consumption and average purchases over a fixed period. Abnormally large quantities of stock on hand may be the legitimate result of shrewd foresight in buying in a low market, but may, on the other hand, arise from serious errors in stock taking.

(16) Always attempt to check the totals by the "gross profit test" and compare the percentage of gross profit shown with that of previous years. In a business where the average gross profit remains fairly constant this test is a dependable one, because, if the rate of gross profit is apparently not maintained and the discrepancy cannot be satisfactorily accounted for by a rise or fall in the cost of production or of the selling price, the difference will usually be due to errors in stock taking.

(17) In verifying the prices at which the work in progress is included in the inventory, a general examination and test of the cost system in force is the best means of doing this work satisfactorily. In a good cost system little difficulty will be found with the distribution of the raw materials stores and pay roll, but the distribution of factory overhead cost is one that should receive careful consideration, the main points to be kept in view being:

(*a*) That no selling expenses, interest charges, or administrative expenses are included in the factory overhead cost.

(*b*) That the factory overhead cost is distributed over the various departments, shops, and commodities on a fair and equitable basis.

(18) No profit should be included in the price of finished products or stock in trade. The price list should be examined to see that the cost prices of stock are below the selling prices after allowing for trade discounts, and, if they are not, a reserve should be set up on the balance sheet for this loss. If the company takes immediate steps to increase the selling price, however, the amount of this reserve may be limited to the loss on goods which may have been sold since the close of the period to the date of the discovery.

(19) In the case of companies manufacturing large contracts it is frequently found necessary to make partial shipments thereof. The question then arises as to whether it is permissible to include the profits on these partial shipments in the profit and loss account. As a matter of fact, it is evident that the actual cost cannot be known until the order is completed. It may be estimated that a profit will ultimately be made, yet unforeseen conditions, such as strikes, delays in receiving material, etc., may arise to increase the estimated cost. It is better not to include the profits on partial shipments, but information of this character which may have its influence in the decision of the banker upon a proposed loan may properly be laid before him. Of course, an exception should be made in cases where the profit on the partial shipments largely exceeds the selling price of the balance of the order.

(20) The selling prices for contract work in progress should be ascertained from the contracts, and where it is apparent that there will be a loss on the completed contract a due proportion of the estimated loss should be charged to the period under audit by setting up a reserve for losses on contracts in progress.

(21) If a company has discontinued the manufacture of any of its products during the year, the inventory of such products should be carefully scrutinized and, if unsalable, the amount should be written off.

(22) The inventory should be scrutinized to see that no machinery or other material that has been charged to plant or property account is included therein.

(23) Partial deliveries received on account of purchase contracts for material, etc., should be verified by certificates from the contractors, both as to quantities and prices.

(24) Advance payments on account of purchase contracts for future deliveries should never appear in an inventory, but be shown on the balance sheet under a separate heading.

(25) Trade discounts should be deducted from inventory prices, but it is not customary to deduct cash discounts. However, this may be done when it is the trade practice so to do.

(26) While the inventory is being verified, the auditor should ascertain the aggregate sales for the last year. If the turnover has not been rapid, it may be due to a poor stock of goods. Some business men dislike to sell below cost and would rather accumulate a big stock of old goods than dispose of the old and unseasonable stock at a sacrifice. The usual outcome is that the stock becomes unwieldy and funds are lacking to purchase new goods. The inventory and the gross sales may, therefore, have a direct connection.

(27) It may be well to reiterate that interest, selling expenses, and administrative expenses form no part of the cost of production, and therefore should not be included in the inventory in any shape.

SECTION 8

REPORTS

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 8

REPORTS

NATURE OF REPORTS.—The **public accountant's** field of endeavor is limited to his client's financial affairs and their management. He makes independent examinations and submits his findings by written reports as a matter of definite record.

The **internal auditor's,** or chief accountant's, field is confined to the particular business employing his efforts. The reports he prepares also come under the head of financial reports and may be as complete as that of a public accountant, or may be only interdepartmental.

The reports prepared by public accountants may be classified as:

1. Financial Reports
2. Organization and Management Reports

The purpose of this section is to outline the important points to be considered and covered by the accountant in summarizing the facts determined by his examination. As the majority of cases covered call for financial reports, these are given first and chief consideration.

While this section is written by a public accountant, and from his standpoint, the qualifications for a comprehensive financial report are not too exacting to be met by the internal auditor in preparing reports that he may wish to submit to his executives.

WHAT IS A FINANCIAL REPORT?—**Finance** is the science of the management of money and monetary affairs; the control and regulation of revenue and expenditure.

The term **finances** is generally used as meaning resources, funds on hand or coming in, which may be assets or income.

Financing signifies the management of financial affairs for oneself or others; providing funds; devising ways to meet obligations, and conducting monetary negotiations.

A **report** is the formal statement of the result of an investigation, or a record with more or less detail of a specific transaction or transactions of a business venture or enterprise. To make a report is to bring back as an answer, or to give an account, or present information obtained by investigation, or personal observation, or inquiry in more or less detail.

A **financial report,** then, is the formal statement of facts determined by personal investigation or inquiry, relating to the pecuniary resources, income and expenditure, and financial management of an individual, company, corporation, or institution. The report logically falls into a statement as to resources, and a statement summarizing the operations of the management, and the result.

Examinations which accountants are required to make also fall into two groups: (1) investigations as to resources—the balance sheet audit; and (2) investigations as to management and operations. An engagement may call for an investigation of one or more phases of resources, liabilities, or opera-

tions. The character and scope of the report is predetermined by the requirements of the engagement.

The first essential of an adequate and competent report is a clear outline of work to be done and the results sought. The **program of audit**—or outline of engagement—is fully covered in other sections of this manual, but the beginner and experienced practitioner are here reminded that the first step in preparing their reports is the review of the work done as indicated by the checked and signed program. This should not only show records and documents examined, but point out records or documents missing, withheld, or overlooked. The accountant in making his audit does not literally **hear** all the facts but he should **see** them, and hear all explanations necessary to a clear understanding of every transaction that has taken place, making notes from which he can intelligently write clarifying comments.

For Whom Financial Reports Are Prepared

1. BUSINESS EXECUTIVES, DIRECTORS, STOCKHOLDERS.—Operations of trading, manufacturing, mining, public utilities, amusement, and various miscellaneous corporations are predicated on the use and management of capital in the production and sale of goods or service for profit. The executive of today assures himself and his associates that his business has been carried on through a given period in accordance with correct principles and that the written record is correctly stated on books of account. This assurance is obtained by utilizing services of expert accountants to make an independent audit of the books and documents on which are recorded the business transactions under review. The reports submitted on such cases comprise the largest class with which accountants deal.

The scope of financial reports required by **business executives** embraces the transfer of interdepartmental information in written form.

Internal or **interdepartmental reports** are co-ordinated so that there is no duplication and only necessary information transmitted for use when and where needed. Such internal reports have to do with regular routine of business, as, report of receiving department to purchasing department, production department to sales, sales department to general manager, accounting and collection department to treasurer, and treasurer to president. The most common internal report is a condensed summary of cash transactions and resulting balance, trading transactions, and resulting balances in receivables and payables.

Well-trained head-bookkeepers, or office accountants, are capable of preparing regular financial reports comprising balance sheet and operating statements. Such office accountants will do well to follow the outline of reports used by public accountants. They should avoid protracted statements, presenting a reasonably condensed balance sheet and operating statement, the account totals of which may be broken down by subsidiary statements and supporting schedules. Parts of reports so prepared may come from different departments, the bookkeeper in charge of sales ledgers submitting the schedule of receivables, and the bookkeeper in charge of creditors ledgers submitting schedules of accounts payable, etc.

When prepared by internal auditors, these schedules should present more detail for review by the executive interested than is ordinarily submitted by the public accountant. The collection department should have, to guide him in his work, a schedule showing sales terms to various customers, if

they differ, and dates of unpaid items. The treasurer also requires details of payables to aid in maintaining a proper credit standing and assure the taking of all discounts. Schedules of inventory materials may be comparatively prepared, which will automatically point out sluggish stocks and call attention to stock that should be replenished.

The accountant should keep constantly in mind the purpose for which the report, statement, or schedule will be used, presenting all information as concisely as possible, but with sufficient explanation to answer questions that the figures may raise in mind of executive using such reports. See section on "Statistics and Graphics" for additional information.

The following illustrative forms show how statistical information can be prepared presenting much information to executives, that will be readable at a glance.

Form 1—Daily Cash Report
" 2—Daily and Monthly Statistical Summary Sheet
" 3—Daily Statement of Current Assets and Liabilities

On Form 3, "Today's Business" figures simply illustrate the method of adjusting daily balances. They are not intended to show relation of changing inventories to receivables, etc.

THE FAMOUS ROCKHORN COMPANY
Daily Cash Report for................, 192..

	Total	Bank A	Bank B	Bank C
BALANCE at Close of Yesterday's Business	$.....	$	$.....	$.....
RECEIPTS:				
Accounts Receivable....				
Notes Receivable......				
Notes Receivable Discounted.... . . .				
Bank Loans........................				
Interest......				
Miscellaneous (detail on reverse)... ..				
Total.............				
DISBURSEMENTS:				
Accounts Payable............. .				
Bank Loans Repaid				
Interest......				
Miscellaneous (detail on reverse).. .				
Total..............				
BALANCE at Close of Today's Business...				

FORM 1. Daily Cash Report

This form represents a simple daily cash statement to be rendered by accounting department to Treasurer. Figures for completing statement are obtained directly from cash book. Value of statement may be increased by appending amounts for maturities of notes and accounts, etc.

THE FAMOUS ROCKHORN COMPANY
Statistical Sheet for Month of December, 192..

	Sales		Accounts Receivable Collections	Mdse. Creditors	
	Orders	Shipments		Purchases	Payments
Totals for Corresponding Month Previous Year...	$........	$........	$........	$........	$...........
Sat. 1	$........	$........	$........	$........	$........
Sun. 2					
Mon. 3 Tues. 4 Wed. 5 Thurs. 6 Fri. 7 Sat. 8					
Sun. 9					
Mon. 10 Tues. 11 Wed. 12 Thurs. 13 Fri. 14 Sat. 15					
Sun. 16					
Mon. 17 Tues. 18 Wed. 19 Thurs. 20 Fri. 21 Sat. 22					
Sun. 23					
Mon. 24 Tues. 25 Wed. 26 Thurs. 27 Fri. 28 Sat. 29					
Sun. 30					
Mon. 31					
Total...					

FORM 2. Daily and Monthly Statistical Summary Sheet

This form presents a simple statistical record, figures for which are drawn from the several accounting and sales department records. Totals may be shown at the end of each week. When filed in a desk binder on top of the preceding month, comparisons are easily made.

THE FAMOUS ROCKHORN COMPANY

Daily Statement of Current Assets and Liabilities for Week Ended................, 192..

	Balance at Close of Yesterday's Business	Today's Business	Balance at Close of Today's Business
ASSETS			
CASH IN BANKS:	$	$	$
Bank A......................	5,000	5,000 *4,000*	6,000
Bank B......................	3,000	.....	3,000
Bank C......................	6,000	3,000 *5,000*	4,000
	$14,000	*$1,000*	$13,000
ACCOUNTS RECEIVABLE...........	40,000	*5,000* 4,000	39,000
NOTES RECEIVABLE..............	5,000	.....	5,000
INVENTORIES:			
Finished Goods................	10,000	4,000 *3,000*	11,000
Work in Process...............	4,000	3,000 *2,000*	5,000
Materials and Supplies.........	3,000	*1,000* 1,500	3,500
Total.....................	$76,000	$ 500	$76,500
LIABILITIES			
ACCOUNTS PAYABLE........	$ 6,000	*$3,000* 2,500	$ 5,500
NOTES PAYABLE (Mdse.).........	3,000	.....	3,000
BANK LOANS:			
Bank A......................	3,000	*1,000*	2,000
Bank B......................	....	.....	....
Bank C......................	10,000	3,000 *5,000*	8,000
PAY-ROLL ACCRUED.....	1,500	500	2,000
Total.....................	$23,500	*$3,000*	$20,500

FORM 3. Daily Statement of Current Assets and Liabilities

NOTE: Accretions in black. Reductions in red (here given in italics).

For weekly statement, use form wide enough to provide six times the above unit.

This statement enables treasurer to watch relation between quick assets and liabilities. Figures for completing statement are obtained from daily cash transactions, purchase records, and pay-roll accrual.

It serves as a control sheet for placing deposits in relation to bank loans, etc.

2. BANKING INSTITUTIONS.—

(a) **For Credit Purposes.**—Banks and business corporations which loan money or extend credit require borrowers to present a financial report containing a certified statement of financial condition or net worth. The tendency toward review of the latest period's operating statement is growing in such institutions and the request for the full auditor's report is frequent.

A large number of loans made by banks to commercial houses are on the

borrower's own or one-name paper, and are for the purpose of carrying closed transactions over the peak points, as to credit extended, or heavy inventory periods of the business. While bankers pay particular attention to the availability of borrowers' resources, they are vitally interested in knowing what the result of turnovers will be.

In many cases the would-be borrower does not need the bank's assistance in the way of loans as much as the advice to liquidate obsolete inventory stocks, discard unprofitable lines, shorten terms, and readjust his expenditures of money so that they will have the maximum earning capacity, and produce his own working capital.

The accountant may and should advise his client on such matters when the study of his needs discloses such conditions, and when a letter of recommendations or comments on an audit for credit purposes reaches the banker, he is given more than the point of view obtained from the balance sheet alone.

In the preparation of these reports the accountant, as always, should have constantly in mind that his signature to the report means that the figures presented represent facts and that all facts should be presented that have been stated. Any admission that is incorrect or omission of something that should have been reported will mean the loss of the banker's money and confidence.

(b) **For Security Issues.**—The investor who buys stocks or bonds without examining or having examined the latest financial reports of the debtor corporation, does not heed the warning: Let the buyer beware. Responsible underwriters of security issues now have exhaustive examinations made by accountants and engineers as to the history of the company they are about to finance.

Reports called for cover every aspect of business operations, with comparisons over a period of years to show trend of conditions and various aspects of earning power. Balance sheets before refinancing, and balance sheets giving effect to new financing, will be presented, with forecasts as to results to be obtained under new financial programs. Past performance by years, showing earnings and return to stockholders and an estimate of the ability of corporations to pay dividends by economies to be effected or increased earning power of additional working capital, are important phases of these reports. Accountants can assist clients by tabulating past and anticipated results and suggesting the logical presentation of hoped-for earnings which are beyond the facts with which they deal.

3. FOR INVESTORS IN BUSINESS OPPORTUNITIES.—Going concerns are often offered for sale in part or as a whole and are sought by men who wish to make an investment and take an active part in the management of the business. Offer of vendor company is usually on the basis of its condition at a given date, under an agreement to turn over a certain share of interest in its net worth and corresponding control, or a block of stock for a fixed sum.

Investors select an auditor to make the examination at expense of vendor. The report submitted in such cases should present a **Balance Sheet** at the given date, supported by detailed schedules of all assets and liabilities, a **Comparative Statement of Income and Profit and Loss from Operations** for a number of years, with supporting analyses of income and expense accounts, if required by the condition of such accounts.

Whether an appraisal of the plant is contemplated or not, all entries to plant and property accounts from the inception of the business should be examined to see that maintenance and repairs and renewals have not been capitalized and that proper depreciation has been provided.

A complete **Statement of Surplus** will often disclose items which have helped to make a healthy-looking balance sheet and which, while the result of the foresight and sagacity of the business executives, have no bearing on the past or future operations. A case in point is the sale of a building during a period of high local values at a considerable profit, which forced a subsequent long-term lease at ruinous rental.

Contracts, leases, and agreements should be reviewed and a digest of each submitted.

Clients may request examinations as to certain accounts only, as current assets and liabilities, stating that they have no interest in the fixed assets and real property with underlying mortgages.

It is unwise to make engagements so restricted. Any proposition open to negotiation in which an accountant's report is a factor, calls for a complete and exhaustive examination—otherwise questions arise that cannot be satisfactorily answered, and either buyer or seller is put to a disadvantage that will react against the accountant.

Reports to investors of this class call for full comments on all facts presented.

4. CREDITORS', FINANCING, AND REORGANIZATION COMMITTEES.—A business placed or putting itself in the hands of a committee does so for its own protection and for the equitable treatment of all its interests. It may be solvent and operating at a profit but unable to agree in executive board as to future policy; officers and heads of departments may be out of gear. Or it may be unable to meet its current liabilities and, because of hopeful financial reports prepared by its own organization, think that time and additional working capital are all that it needs.

Auditors' reports after examination in such cases should present:

1. Balance Sheet as a going concern, with comparative estimate of realizable assets and ranking liabilities—if liquidated.
2. Comparative Statement of Operations, covering a period of years.
3. Summary of Uncompleted Business, Cost to Complete, and Estimated Profit.
4. Chart of Organization and Memorandum as to Management.

Comments should include the accountant's opinions as to cause of difficulties, and suggest remedies or advice as to continued operation or liquidation. Committees expect these opinions, and they have much weight in conference if report under discussion indicates that the auditor used his brains in preparing it.

5. FOR FIDUCIARIES AND RECEIVERS IN BANKRUPTCY.—The largest percentage of reports prepared for and required by fiduciaries are based on estates and trusts usually in form of income-bearing securities. If an estate or trust owns a going business, a supplemental report on its operation should be prepared supporting the income shown from it in the accounting.

When accountants are called upon to prepare reports for fiduciaries, it is wise to depart from the style used in ordinary financial reports and follow legal requirements of the particular case. The law prescribes the manner in which information must be presented to the court and it is necessary for accountants to acquaint themselves with forms specified by law.

The report which accountants prepare most frequently for fiduciaries is **An Accounting** rendered to the surrogate in connection with judicial settlement of an estate. In preparing this accounting, follow form required by

surrogate. The accounting is summarized in one statement wherein the executor or administrator is charged with all money and property which he receives, credited with all money and property disbursed, leaving on hand the difference between the two which must be accounted for in a later accounting. Various detailed schedules must be submitted supporting amounts entered in Summary Account and vouchers must be included supporting all disbursements by fiduciary.

The accounting should be typed on legal cap. All vouchers supporting disbursements should be numbered consecutively according to order of appearance in schedules of accounting where corresponding voucher numbers should appear.

When the accounting is delivered to client, he can then submit it in its entirety to surrogate or make such changes or additions as he sees fit. Frequently matters come to attention of the accountant, while making the audit of estate records, which could not properly be entered in the accounting rendered to surrogate. It may be advisable to present to the client more detailed information, or information summarized differently than it appears in the accounting. In such cases, it is proper to submit a **second report** supplementary to the accounting and which can follow the lines of the usual financial report rather than the legal form. See section on "Fiduciaries" for forms and procedure.

6. FOR INSTITUTIONS.—Welfare, religious, and educational institutions own and hold property operated for the public good, receive and disburse income, and prepare financial reports periodically to present the results of management. Their endowment funds stand as capital. Property left in trust cannot legally be disbursed and must be held intact. Money or property given outright may be used for current needs, and can be reported as income during the period received. Some institutions fail to carry realty and personalty and underlying encumbrances on books of account, reporting only income and mortgage or bond interest paid.

Accountants' reports should distinguish income assets from endowment or principal assets on balance sheets, and separate liabilities to be paid out of revenue from liabilities against endowment or investment assets.

The **letter of presentation** or certificate should state that all income and property shown to have been received had been properly accounted for; that all disbursements were made on proper authority and were supported by satisfactory vouchers; that all cash and securities had been verified by count or by the properly authenticated certificates. Any exceptions to a clear certificate should be pointed out.

Preparation of Data

ASSEMBLING THE DATA.—Accountants cannot prepare reports from memory. During examinations verified facts are recorded on working sheets; analyses or transcripts of important personal and property accounts are made with reference to books and documents of original entry; and digests of contracts and agreements and full notes of historical facts are prepared.

Accountants' technique is shown by their working papers. If properly prepared, little difficulty is experienced in drafting clear and competent reports. Prepared in the field, they should provide:

1. Statements and schedules to be included in report or to support items appearing in such statements or schedules.

2. Record of work done, with notes relating to items or conditions calling for comments.

Auditors should have clearly in mind the purpose for which work is being done and points to be covered by the report. The work should be outlined in **program of audit,** and as each step is completed the fact noted thereon.

Each statement or schedule should be **headed** thus:

1. Correct name of company, firm, or proprietor.
2. Title or description of what the sheet purports to be.
3. Date or period covered.
4. Date prepared and name of auditor. (May be placed in upper right-hand corner of sheet.)

On **working papers,** as in final report, make all headings of statements explicit. Better a long, full description of the exhibit than a brief heading that leaves a question. This is particularly important in preparing statements for use in negotiation or litigation. A leading authority on financial reports states: "Every item of current assets is open to question." The heading should be so clear that no question can be raised as to what the exhibit purports to be.

Working papers should be prepared so that book accounts can be adjusted for correct presentation on balance sheet of the report. For example, Office Cash Fund, if made up of cash and I O U's, should become on the report:

Cash on Hand
Sundry Debtors, or
Due from Officers and Employees

Notes Payable, if given for bank loans and merchandise purchased, should be presented as:

Notes Payable to Banks
Notes Payable to Merchandise Creditors

The first working paper to be prepared is the **General Ledger Trial Balance.** This becomes an index of the accounts under review and for working papers. In drawing it from the general ledger, posting references will indicate the books of original entry. It should be headed as follows:

The Famous Rockhorn Company
General Ledger Trial Balance
Working Sheet Covering the Period from January 1 to June 30, 19....

7–14–19...
C. Hoyt

(Wide columnar sheet of analysis paper with column headings as indicated beginning on the left-hand side.)

1. Schedule or Index No.
2. Ledger Folio
3. Account Classification
4. Trial Balance—January 1, 19....
   (a) Debits
   (b) Credits
5. Trial Balance—June 30, 19....
   (a) Debits
   (b) Credits
6. Adjustments and Transfer Entries
   (a) Debits
   (b) Credits

7. Profit and Loss
    (a) Debits
    (b) Credits
8. Assets and Liabilities
    (a) Debits
    (b) Credits
9. References and Notes or Comments

It is advisable to allow space between each entry for **brief notes** and to prevent overcrowding of adjustments and transfer entries when more than one entry affects a single account. Adjustments and transfer entries should always be prepared in form of journal entries, numbered or lettered consecutively, with full and complete explanations following each entry, and filed immediately following the working sheet.

Final amount on each sheet should be amount appearing on statement or schedule in report. This is important. The auditor should always be able to locate in working papers each figure presented in his report. Forms and headings of various working sheets used in audits are illustrated in section on "Audits and Working Papers."

As a general rule, a **separate sheet** should be used for each item which is the subject of a schedule or of notes in working papers, if the matter contained therein is too voluminous to be noted on working sheet proper, in order to facilitate proper arrangement of papers upon completing work.

When an audit is completed, all papers should be arranged in same order as items to which they relate appear on balance sheet or other statements included in report, securely fastened together and indexed. The **file of working papers** is the accountant's evidence and proof of figures submitted in report, and plain trail back to ledger figures.

Public accountants and internal auditors not well trained in the proper method of handling working papers should familiarize themselves with such books as "Accountants' Working Papers" by Palmer and Bell, and "Audit Working Papers" by Jackson; also appropriate topical treatments found in general accounting works. See also section on "Audits and Working Papers."

Methods of Preparation

PROCEDURE.—The outlines of engagements received from clients suggest the scope and character of reports desired. The work has been laid out and supervised with a view to obtaining certain results. The report is not merely confined to the client's suggestions, but may be amplified or contracted as results obtained warrant.

When field work is completed, a **rough draft of report** is drawn. The working papers are reviewed to see that all accruals and connecting and adjustment entries have been made, that all capital expenditures have been explained, all supporting verifications such as bank certificates and confirmation of loans have been received, agreed and filed in order, and that proper notes have been made explaining unusual accounts or items.

The **Balance Sheet** and **Income Statement** are prepared, any schedules necessary to support such exhibits being drawn from the working papers and properly headed for typing.

With these statements in hand the report writer, whether a partner, supervising accountant, or a member of the organization who acts as editor and has no other part in the engagement, drafts or dictates the **letter of presentation** and **comments, if any.**

The **aim of the report writer** is to submit all possible information in the most direct and concise form. Clients ordinarily are not concerned as to how the audit was made. Their interest is in statements presented over the signature of the firm or person selected to do their work.

All that is now left of preparation is mechanical and follows well-defined procedure.

Longhand drafts of exhibits, schedules, and notes should be stamped with a form, as follows:

DATE. . . . .
PREPARED BY. . . . .
ADD. & EXTEN. CKD. BY. . . . .
TYPED BY. . . . .

and go to the typist properly initialed.

Checking all footings and extensions on report drafts will often forestall the necessity of retyping matter that comparison after typing shows to be incorrect.

Instructions to the typist should be explicit and the following form may be used and attached to the draft:

Specifications For Report

To Report Dept. 192
CLIENT. . . . .
SIZE AND KIND OF REPORT PAPER. . . . .
NUMBER OF COPIES TO BE TYPED. . . . .
NUMBER OF EXHIBITS (LETTERED). . . . .
NUMBER OF SCHEDULES (NUMBERED). . . . .
COMMENTS: HEREWITH. . . . . TO BE DICTATED. . . . .
MISCELLANEOUS INSTRUCTIONS. . . . .
. . . .
. . . .
. . . .
. . . .
COPY FOR COVER. . . . .
. . . .
. . . .
. . . .
. . . .
. . . .
REPORT DATED. . . . . .192. .
SEND REPORT TO. . . . .
. . . .
. . . .
SEND REPORTS (HOW). . . . .
REPORT SHOULD BE COMPLETED BY. . . . .

FORM 4 Specifications for Report

The **appearance of reports** contributes largely in creating favorable or unfavorable impressions in minds of readers. The principal factors in appearance are: (1) paper, (2) typing, and (3) binding.

PAPER.—

Size.—Two sizes of paper most frequently used for reports are letter size, 11 x 8½ inches, and legal size, 13 x 8½ inches, with double sheets, 11 x 16½ inches and 13 x 16½ inches, respectively, for displaying balance sheets and columnar statements. Letter size, 11 x 8½ inches, is to be preferred, as reports that size will fit into standard letter files found in every office and file drawers of practically every executive's desk, whereas legal size, 13 x 8½ inches, requires legal-size files for upright filing and must be laid flat if filed in desk drawers.

Stock.—A good grade of thin bond paper, with which at least six copies can be made at one writing, is desirable. When more than six copies of a report are required, two or more typings will be necessary, or the use of one of the several makes of duplicating devices on the market.

Many accountants use paper imprinted with the firm name at the bottom of each sheet to guard against misuse of their reports. Any accountant can have report paper manufactured and watermarked with the firm name. This practice has the disadvantage that statements typed over an imprinted name are sometimes used away from accompanying certificate and comments. Statements that appear to have been prepared by accountants are often given unwarranted credence.

TYPING.—Use type easily read. Matter should be spaced sufficiently to avoid appearance of crowding. Better to use two sheets than have matter crowded on one. Rulings should be used sparingly and should be typed.

Excessive underscoring of captions and side titles should be avoided. As a general rule, captions and side titles when capitalized should not be underscored. Use of capitals tends to place sufficient emphasis upon the wording.

COMPARISON.—As the report is typed, the copy to be retained by the accountant should be stamped for comparison as follows:

DATE....................................
COMP'D BY...............................
ADD. CKD. BY............................
REF. CKD. BY............................
CORR. EXAM. BY..........................
APPROVED BY.............................
SIGNED BY...............................

The comparing should be done by two—one reading from the typed copy to the original. All corrections should be made in ink and should remain as so corrected on the retained or office copy and a check mark made in the left margin to call attention to the line and correction.

All additions and subtractions should be checked on the typed copy. Transposition of figures may not be caught in reading but will be found by proving additions and subtractions.

If all extensions have been verified on the working sheets as recommended above, it is not necessary to check them again on the typed copy.

The final review in the report typing department is to check and verify all references.

Before binding, the completed report should be passed on by the report writer or supervisor. No report should be signed before being bound.

Preparation of internal reports may follow closely the directions laid down for public accountants. All forms should be standard letter size or units thereof. The same care should be used in proving, preparing, and checking as that given to a public accountant's report.

BINDING.—Reports should be permanently bound with eyelets or other fasteners that cannot easily be removed. For covers use a good grade of cover stock, flexible enough not to crease badly when folded, and a color not easily soiled.

When an exhaustive examination has been made, or reports on a consolidation of interests have been prepared which will receive heavy use, or when it is desired to dress a report in an especially attractive manner, limp leather covers may be used and the report titles and accountant's name imprinted in gold letters.

Whatever the type of cover selected, the title should be centered on the cover and should include:

1. The name of the company, firm, or proprietor whose accounts are the subject of the report, such as:

   THE FAMOUS ROCKHORN COMPANY

2. The title, which should be descriptive of the matter contained in the report, such as:

   BALANCE SHEET
   or
   REPORT ON EXAMINATION FOR THE PERIOD

3. Date or period covered, such as:

   JUNE 30, 1923
   or
   FROM JANUARY 1 TO JUNE 30, 1923

Presentation of Reports

The general practice of accountants in submitting financial reports after audit is to address a letter of presentation to the proper officer, embodying such certificate as may be given, with exhibits attached, as:

Balance Sheet—Exhibit A
Income and Profit and Loss Statement—Exhibit B

CONTENT AND ARRANGEMENT OF STATEMENTS.—A Balance Sheet—or Statement of Net Worth—is the only statement that can be obtained from the trial balance of a single-entry set of books, and the comparison of the net assets with those of a previous date tell whether the operations between those dates resulted in a profit or a loss. This method was for many years and still is employed by some business men, who never know whether profits or gains after having been made may not have strayed away or been stolen.

It is certain that clients are most interested in the final figure of the report—the net result of operations—and that is rapidly becoming of supreme interest to lending bankers.

One of the prominent New York banks publishes in newspaper and other advertising space a statement of condition that can be understood by the average person. The presentation of the statement is based on the theory that, as it is operating largely on its depositors' money, they will have the keenest interest in how much that is, and how it is held or utilized by the bank. The report reads to this effect:

"We owe our depositors this amount of money, \$..........,
And we have to meet that debt, the following:"
(*Enumerating its resources*)

It would, no doubt, please many clients to have presented to them:

1. Result of Operations for the Period and How Produced.
2. Financial Condition at the end of the Period.
3. The Auditor's Comments and Explanations, if any are required.

The balance sheets which members of the American Bankers Association require of borrowers, the Federal Reserve Board form, and the set-up on the 1922 U. S. Internal Revenue Income Return Blanks, maintain the so-called **American form** of arrangement—i.e., assets in the order of their availability; liabilities in the order of their preference.

This arrangement is so thoroughly reasonable and logical, that no other arrangement will be considered here. The banker wishes to see the ratio of **liquid or available assets** to **liabilities to creditors,** and the present-day investor and the stockholder is more anxious to know that there are liquid resources for paying dividends and that his shares can be converted readily, than that they are held in a permanent capital investment.

The Federal Reserve Board form is presented elsewhere in this manual. Accountants can safely follow either the Federal Reserve Board form, or the outline on the federal income tax blanks.

Income and Profit and Loss Statements show the amount of gain or lack of gain resulting from the ownership of assets or professional or business activities, over a stated period of time, and give sufficient detail to show the reason for the result obtained. The term **income** is generally used to describe results obtained from professional practice or where a fund of assets is held in investments or real estate. The term **profit and loss** is used to describe results obtained from trading, manufacturing, or merchandising. When the result is produced from both classes of activities, the term **income and profit and loss** describes the combined result.

Statements of Income and Profit and Loss may be displayed in **running form** or as an **account.** The former is preferable. The account form as debit, credit, and balance, looks forbidding to many men unfamiliar with accounting procedure and should not be used if a direct statement can be presented. In the construction of the running form of statements, the gross income or gross sales is entered at the top of the sheet under the heading and offsetting charges are deducted. These deductions should be so classified as to bring out clearly the effect of each such classification upon the final result shown at the bottom of the statement. To give emphasis to the effect of each item or class, percentages should be shown to the right of the money columns.

If the detail required to show clearly the effect of an item, or group of items, is voluminous, it may be given in a subsidiary schedule or statement, the total of which will support the amount entered on the major statement. Thus, an analysis of sales by departments or commodities, or cost of goods manufactured, may be submitted on supporting schedules.

The proper **technical construction** for the auditor's financial report is:

1. Letter of Presentation
2. Balance Sheet (as an exhibit)
3. Surplus (as an exhibit)
4. Statement of Income and Profit and Loss for the Period (as an exhibit)
5. Supporting Schedules

Mr. Ralph Rockhorn, President,
The Famous Rockhorn Company,
New York City, N. Y.

Dear Sir:

In accordance with your instructions, we have audited the books and records of your Company for the six months ended June 30, 1923, and submit the following:

EXHIBITS

A Balance Sheet—June 30, 1923

B Statement of Income and Profit and Loss for the six months' period ended June 30, 1923

Cash—$9,000.00

We verified the cash on hand by actual count and the cash on deposit by certificates from the depositories.

Notes Receivable—Trade—$500.00

The notes receivable, which we verified by inspection, were all made by the F. F. Stores, Inc., New York, and were as follows:

Dated	Due	Interest	Amount
Jan. 23, 1922	July 23, 1923	6%	$150.00
Jan. 23, 1922	Jan. 23, 1924	6%	150.00
Jan. 23, 1922	July 23, 1924	6%	200.00
			$500.00

Accounts Receivable—$26,700.00

We scheduled and classified the open balances which appeared in the customers ledger at June 30, 1923. The following is a summary:

Age	Amount
30 days and under	$25,053.39
30 to 60 days	387.58
60 to 90 days	....
Over 90 days	1,259.03
	$26,700.00

After discussing the delinquent accounts with you, we believe you are correct in considering them all good and collectible.

Sundry credit balances appearing in the accounts receivable we have shown as accounts payable on the balance sheet.

Inventories—$32,300.00

This total is the result of the physical count at June 30, 1923, made at our direction and under our supervision. This figure is verified by your costs and book inventories, and you have certified it to us as representing the correct amount of merchandise and supplies on hand, valued at cost or market, whichever is lower.

We have checked all additions and tested extensions and prices.

Notes Receivable—Blank Manufacturing Company—$32,500.00

These notes are of an associated company located in Newark, New Jersey, as follows:

Dated	Due	Interest	Amount
Aug. 30, 1922	On Demand	6%	$ 8,000.00
Oct. 10, 1922	On Demand	6%	14,500.00
Nov. 29, 1922	On Demand	6%	5,000.00
June 10, 1923	On Demand	6%	5,000.00
			$32,500.00

FORM 5a. Form of

Investments:

Second Mortgage on Real Estate—$2,000.00

This mortgage is dated April 29, 1920, and was due April 29, 1923. The original amount, $5,000.00, has been reduced to $2,000.00 and bears interest at the rate of 6% per annum.

Blank Manufacturing Company Stock—$32,000.00

This stock is shown at cost and is represented by:

216 shares Preferred Stock, and
243 shares Common Stock.

Net Cash Surrender Value of Life Insurance Policy—$800.00

The cash surrender value of the insurance policy carried on the life of Mr. Ralph Rockhorn, President, is stated in a letter of the Associate Actuary of the Mutual Life Insurance Company,

to be	$8,700.00
against which a loan has been made of	7,900.00
leaving a net cash surrender value of	$ 800.00

Fixed Assets:

Machinery and Equipment—$97,000.00

This account shows an increase of $5,000.00 during the six months' period.

We examined vouchers supporting additions to this account, all of which appear to be proper charges thereto.

Accounts Payable—$21,200.00

We examined transactions subsequent to June 30, 1923, to satisfy ourselves that all the liabilities of the Company at that date had been entered upon the books, and you have certified to us that all the known liabilities at June 30, 1923, were recorded upon the books of account prior to that date or made known to our representative.

7%—10-Year Gold Debenture Bonds, Due March 15, 1933
(Authorized $100,000.00)
Issued—$4,600.00

The Central Union Trust Company, Trustee, has certified to us that they held unissued bonds amounting

to	$ 94,000.00
and we inspected unissued bonds in the possession of the Company amounting to	1,400.00
Total Unissued	$ 95,400.00
leaving a balance, representing issued bonds of	4,600.00
Total Authorized	$100,000.00

Employees' Subscriptions—$6,500.00

This amount represents payments on bond subscriptions by employees of the Company.

* * *

Subject to the foregoing comments, we certify that the attached Balance Sheet and Statement of Income and Profit and Loss correctly present the financial condition of The Famous Rockhorn Company at June 30, 1923, and the result of operations for the six months' period then ended, respectively, and are in agreement with the books.

Yours very truly,

....
Certified Public Accountants.

Accountant's Report

If there have been items affecting the Surplus Account so that a clear presentation of such changes cannot readily be made on the Balance Sheet, prepare a separate exhibit of Surplus to follow the Balance Sheet exhibit and to which the end figure of the Statement of Income and Profit and Loss would be carried.

COMMENTS.—It may be stated as a fact that the most competent reports often have the fewest comments. Too often, comments and qualifications are called for because the report writer finds when reviewing the working papers that the examination was either shrewdly limited by the client,

THE FAMOUS ROCK

BALANCE SHEET

ASSETS

Current Assets:			
Cash on Hand and in Bank		$ 9,000.00	
Notes Receivable—Trade		500.00	
Customers' Accounts Receivable		26,700.00	
Interest Receivable		100.00	
Due from Employees		300.00	
Inventories:			
Raw Materials	$11,300.00		
Finished Goods	6,000.00		
Supplies	15,000.00	32,300.00	
Total		$ 68,900.00	
Notes Receivable—Blank Manufacturing Company		32,500.00	
Total Current Assets			$101,400.00
Investments:			
Blank Manufacturing Company Stock		$ 32,000.00	
Second Mortgage on Real Estate		2,000.00	
Net Cash Surrender Value of Life Insurance Policy		800.00	34,800.00
Fixed Assets:			
Machinery and Equipment		$ 97,000.00	
Delivery Equipment		4,800.00	
		$101,800.00	
Less: Reserve for Depreciation		9,300.00	
Total Fixed Assets			92,500.00
Deferred Charges:			
Insurance Unexpired			3,600.00
Traveling Expense Advances			100.00
			$232,400.00

FORM 5b. Form of

the instruction outline was not complete, or, and most frequently, the accountant in charge left some unfinished matters and failed to trace to a conclusion some involved transaction.

The detail, or lack of detail, employed by the auditor in preparing the report depends to some extent upon the wishes of the client. A certified statement of financial position, with or without a statement of operations for the period covered, may be all that is required or desired, with a minimum of comment or qualification; while, on the other hand, full comment upon each item on the balance sheet and the operating statement may be

EXHIBIT A

HORN COMPANY

JUNE 30, 1923

LIABILITIES

Current Liabilities:			
Accounts Payable		$ 21,200.00	
Accrued Interest on Bonds and Notes		400.00	
Total Current Liabilities			$ 21,600.00
7% 10-Year Gold Debenture Bonds Due March 15, 1933 (Authorized $100,000.00):			
Issued		$ 4,600.00	
Employees' Subscriptions		6,500.00	11,100.00
Capital Stock:			
Common Stock:			
Issued and Outstanding—1880 shares—no par value	$185,000.00		
Less: Due on Subscriptions from Employees	2,200.00	$182,800.00	
Surplus, June 30, 1923 (Exhibit B)		16,900.00	199,700.00
			$232,400.00

Accountant's Report—*Continued*

EXHIBIT B

THE FAMOUS ROCKHORN COMPANY

Statement of Income and Profit and Loss

For Six Months' Period Ended June 30, 1923

		% of Sales
Sales	$314,500.00	
Deductions from Sales:		
Trade Discounts	$ 63,700.00	
Freight Outward	8,600.00	
Total	$ 72,300.00	
Net Sales	$242,200.00	100.00
Cost of Goods Sold:		
Raw Materials	$111,000.00	
Merchandise Purchased	2,800.00	
Labor	39,800.00	
Packages	16,700.00	
Manufacturing Expense	8,300.00	
Repairs	1,700.00	
Depreciation—Machinery and Equipment	4,300.00	
Total	$184,600.00	76.22
Gross Profit	$ 57,600.00	23.78
Selling Expenses:		
Stable and Drayage	$ 8,500.00	
City Selling Expense	7,200.00	
Country Selling Expense	2,600.00	
Handling and Shipping	2,200.00	
Advertising	1,900.00	
Depreciation—Delivery Equipment	300.00	
Total	$ 22,700.00	9.37
General and Administrative Expenses:		
Officers' Salaries	$ 7,200.00	
Office Salaries	1,900.00	
Insurance	3,700.00	
Rent	1,900.00	
Stationery and Office Supplies	500.00	
Telephone and Telegraph	400.00	
Collection Charges	100.00	
Subscriptions	100.00	

Form 5c. Form of

expected. In the majority of cases there is a middle point between these two extremes. The circumstances surrounding each engagement will serve as a guide to the experienced auditor.

REPORT FORM ILLUSTRATED.—Form 5 is a report made for a manufacturing and trading corporation after audit. It is to be submitted to the company's bank and therefore calls for explanatory comments.

EXHIBIT B
Page 2

THE FAMOUS ROCKHORN COMPANY
Statement of Income and Profit and Loss

		% of Sales
General and Administrative Expenses: (Continued)		
Taxes	$ 100.00	
Professional Services	1,700.00	
Miscellaneous	200.00	
Total	$ 17,800.00	7.35
Total Selling, General and Administrative Expenses	$ 40,500.00	16.72
Net Profit	$ 17,100.00	7.06
Other Income:		
Interest Received	$ 1,200.00	
Rent	500 00	
Recovery of Bad Debts Previously Charged Off	300.00	
Cash Discounts Received	100.00	
Total	$ 2,100.00	.87
Gross Income	$ 19,200.00	7.93
Income Charges:		
Interest Paid	$ 1,100.00	
Cash Discount Allowed	1,900.00	
Bad Debts Charged Off	200.00	
Cash Shortage	100.00	
Total	$ 3,300.00	1.36
Net Income	$ 15,900.00	6.57
Profit and Loss Credits:		
Excess provision during 1922 for Federal Income and Profits Tax	$ 1,900.00	
	$ 17,800.00	
Profit and Loss Charges:		
Adjustment of Inventory	$ 1,700.00	
Loss on Sale of Delivery Equipment	700.00	
Total	$ 2,400.00	
Profit for the Period	$ 15,400.00	
Surplus, January 1, 1923	1,500.00	
Surplus, June 30, 1923 (Exhibit A)	$ 16,900.00	

Accountant's Report—*Continued*

Presentation here of other balance sheet and operating statement forms would tend to parallel and duplicate the very complete and satisfactory arrangements presented in Bell's "Accountants' Reports" which also contains instruction and information valuable to all accountants who have the preparation of financial reports in hand.

The accountant should consult other sections, such as those on "Con-

solidations" and "Net Income and Surplus," for information of a special type which may be useful in preparation of statements of certain types.

Filing Reports

IN THE ACCOUNTANT'S OFFICE.—The method of filing report copies should be such as to enable one to locate any desired report at once. Two copies are frequently prepared for the accountant's files, one to be filed with working papers supporting it, where it will always be at hand when referring to the papers. It is advantageous to number serially each file of working papers, cross-indexing to a loose-leaf or card alphabetical file. This method avoids frequent shifting of files which results from assigning a file number to each client and then filing all papers under such number.

Where there are several folders for a client, each containing working papers and report copy covering a period, they may be labeled thus:

Serial No. 297—The Famous Rockhorn Company—Audit Working Papers—5 Years Ended December 31, 1922.

Serial No. 568—The Famous Rockhorn Company—Tax Investigation—15 Years Ended December 31, 1922.

Serial No. 603—The Famous Rockhorn Company—Audit Working Papers—Year Ended December 31, 1923.

The alphabetical file for The Famous Rockhorn Co. shows that working papers have been filed under Serial Nos. 297, 568, and 603, and to what particular engagement each file relates.

The second retained copy of report may be filed in a special "Report File," either alphabetically or numerically as outlined above.

IN THE CLIENT'S OFFICE.—Many executives keep certain important papers near at hand for ready reference and the type of desk commonly used by them is fitted with a double-depth file drawer to take regular correspondence folders. Accountants' reports, prepared on commercial letter-size paper, conveniently fit into such a file. Safe cabinets and safes are also frequently fitted with file drawers of either letter or legal size. Accountants' reports should be filed in a safe place accessible only to the persons entitled to have them and available at all times when required. Reports covering different periods should be filed chronologically so that taken together they will give a complete history of the financial life of the business.

Reports on Organization and Management

CHARACTER OF REPORT.—Accountants are usually required to render reports upon organization and management, by reason of engagements secured through: (1) prestige of their organization or certain of its members; or (2) recommendations previously made by them after an initial audit. In either event, the purpose remains the same and is defined by terms of the engagement, supplemented by such sanctioned variations as may be found necessary as investigation or survey develops.

As with financial reports, it will be found, despite the tendency toward standardized organizations, methods, and accounting, that each engagement requires a report similar in principle but differing in essential respects.

In general, it is the accountant's aim so to organize the client's methods

that economic facts are faithfully followed by the records, duplication of effort is eliminated, maximum results are obtained by direct procedure, and the whole enterprise will be co-ordinated and will function as an organization, not as a series of independent departments.

METHOD OF PRESENTATION.—Methods by which the accountant's findings may best be presented to the client depend upon the specific engagement and may be either **analytic** or **synthetic.** The second of these methods is the one most usually followed, and consists in tracing purchase orders through to cost of sales, and sales orders to cash receipts. The flow of goods is presented with the accompanying records and accounts. The books of original entry are described, their posting to charted accounts defined, and then periodic statements are illustrated and their preparation scheduled from the accounts provided.

Supplementing the description of procedure, it is also usual to present **organization charts** comprehending the functions and duties of officers, departments, and individuals therein, together with a **program of procedure** to accomplish the results sought by the installation.

The **analytic method** reverses the order of procedure described for the synthetic method. The body of the report begins with the submission of the plan of general organization, and pursues the functions of the several economic phases of the business to their inception.

The desire of executives to place the operations of their businesses upon a **scientific budget basis** has led to increased demands upon accountants for the rendition of these reports.

CONDITIONS TO BE CONSIDERED.—Whenever accountants are engaged to install new methods for clients, it is necessary for them to conduct a campaign of education with the client. However ready the client may be to accept suggestions, the finished work and its successful operation is contingent upon the thorough mastery by the client and his employees of the new methods to be followed. Illustrations should be so explicit that they permit of no misinterpretation.

Overlapping of duties, duplication of work, lack of co-ordination, or merely general confusion in departments, are conditions often found. Frequently, these faults are a reflection of the management's own personality. Reporting upon such conditions must be tactful but their elimination nevertheless insured. Relations between clients and their accounting advisors should be upon such a professional plane that these errors in organization may be discussed during the installation and corrected at the source.

Examination of client's methods may show that **overhead expenses** are so high that the client is either making profits in spite of mismanagement or that the whole cause of losses is therein contained. It is frequently a difficult problem to convince the client that expenditures are being unnecessarily made, and quite as difficult to persuade him to spend additional money to make money, but the accountant is bound to advise in relation to both conditions.

Other **faulty conditions** frequently found are:

1. Cost system not controlled by general books, but purely statistical.
2. Interest on investment included in inventories.
3. Obsolete stock carried along in inventories.
4. Unsuitable methods of applying overhead.
5. Lost discounts on purchases.
6. Discount on sales improperly allowed.

7. Freights not charged against vendors in accordance with purchase terms.
8. Over or under purchase of materials.
9. Repairs not made, or repairs capitalized.
10. Depreciation insufficient, excessive, or written off amount of assets, etc.

CONTENT AND USE OF REPORT.—The **chief consideration** in rendering a report upon organization and management is the use to be made of it. The report may be entirely advisory and suggest results hoped for, or it may be drafted as a manual of procedure. If a report of recommendations, it will cover methods, routine accounts, management, and will outline required changes.

Where the report is to be used as a manual, it is desirable, in the case of large organizations, to split it into a series, appropriate parts of which may be placed in the hands of respective department heads, while reports in their entirety would be prepared for administrative officers. In this case procedure and contents of accounts, etc., will be presented in elaborate detail.

Instructions for routing records, entering upon books of original entry, posting to general and subsidiary ledgers, etc., should be direct, terse, and explicit. The directions should set forth the exact and entire thought it is desired to convey. For instance, in posting the sales ledger from the sales book, the directions might be: "Currently post all sales invoices to the individual customers' accounts, indexing with the sales invoice number, and noting upon the face of the account the car number of shipment." Such instructions should be didactic, positive, and authoritative.

In content, reports on organization and management should parallel economic phases of the particular business enterprise, either analytically or synthetically. The co-ordinated organization as a properly functioning unit lies at one end of the report and the inception of the various business activities at the other. Thence through the report the accountant must, by careful reasoning, clearly and consistently trace the methods, records, and accounts.

In form the report must be so presented that, in spite of the wealth of detail it may contain, it is readily understood as a whole. Aids to this clarity are a prefixed **index of contents,** appropriate center and subsidiary **side captions** for the text, and **graphics** of organization, flow of materials and records, books of original entry, and charts of accounts.

Examples of forms and statements introduced or recommended should be submitted with the text.

SECTION 9

CLASSIFICATION

CONTENTS

SECTION 9

CLASSIFICATION

DEVELOPMENT OF ACCOUNT CLASSIFICATION.—Until recently, the subject of account classification has received little attention. Prior to about 1890, business was largely local in character; margins of profit were large, and a simple set of accounts met most requirements. Use of the old-fashioned merchandise account was not abandoned by many large concerns until 10 years ago. Recently, competition has grown more keen and the business unit has increased in size and complexity, while manufacturers have begun to take an interest in **costs.** There has grown up an increasing demand for facts, particularly facts concerning quantities and values. The word **efficiency** has taken on a special significance. Under these conditions the simple system of accounts which answered requirements 25 years ago has given way to improved methods of collecting and reporting business and financial facts.

Account Classification Stimulated by Interstate Commerce Commission's Work.—In this development of better reporting methods, the work of the Interstate Commerce Commission has had a stimulating effect. The Commission published a classification of accounts for railroads which went into effect July, 1908; and while the first effort of the Commission met with criticism, its influence on private business was marked. The profession of accountancy was beginning to make its influence felt. In many instances, first audits of business organizations disclosed the need of more suitable classifications of accounts which led to engagements to install **systems** with their accompanying classifications of accounts. These systems have reduced the manual labor of future audits, and have furnished information which modern competitive conditions demand.

Influence of Trade Associations.—Still later, trade associations inaugurated the movement for **uniform systems of accounts.** To some extent the motive of price regulation prompted this movement in many quarters because undesirable competition resulted from ignorance of costs, this in turn being due to poor systems of accounts. There exist today many systems of uniform classifications of accounts developed by trade associations.

Principles and Procedure

FUNCTIONS OF CLASSIFICATIONS OF ACCOUNTS.—Classifications of accounts have two primary functions: They show the relationships of the facts of business in their proper proportion and perspective. They also provide means for testing the business organization. Many vital facts of business are disclosed by preparing a balance sheet and an income account based on a properly devised classification of accounts. Capital invested in a business, whether owned or borrowed, must be properly accounted for.

Financial genius and legal skill create conflicting interests in property; the balance sheet should disclose relationships existing between the business as an entity and outsiders. In addition, it must set forth the relationships of the interests as between themselves. Two or more legal interests may have equities at one and the same time in one piece of property. General and specific liens must be distinguished. These may be called the **external aspects** of the balance sheet.

INTERNAL ASPECTS OF BALANCE SHEETS.—On the other hand, we are also concerned with relationships which may be designated as the **internal aspects** of balance sheets. A large public utility, supplying electricity, may be required by law to show its total investment in prime movers, or transmission lines, or what not, in the aggregate; undoubtedly this is interesting and valuable information. The management is more concerned to know its total investment in any particular operating unit, so that relationships between property and net income from operation may be traced more readily. Classifications which fail to provide for all relationships do not meet the requirements. In like manner, income accounts present their own special problems no less complicated in many instances. In one sense, income accounts may be said to be gauges of efficiency of management. All factors which produce income and which affect costs must receive proper expression in the accounts, so that fair and intelligent deductions and comparisons may be made. On the other hand, some elements which influence the final result cannot be adequately or properly expressed in pecuniary terms, although unerringly reflected in the final result. These factors, usually intangible or psychological in character, render the most exacting classification of accounts of doubtful value as an index of efficiency under certain conditions.

Business is concerned with **physical** as well as **pecuniary** relationships. The dollar is a fluctuating and unreliable instrument of measurement. In periods of rapidly changing price levels, the same physical facts may be reflected by varying monetary results in different periods. Differences must often be explained by reference to other fact relationships than those shown by the classification of accounts. For example, comparative statements as to cost of direct labor may be affected by climatic conditions, general unrest, labor conditions in other industries, or the "esprit de corps" within the organization.

LIMITATIONS OF A CLASSIFICATION OF ACCOUNTS MUST BE RECOGNIZED.—Important as properly devised classifications of accounts are, one must not overlook fundamental limitations which surround the most perfect classifications. It is not enough to have proper classifications of accounts; there remains the necessity of applying other tests to the results shown before definite and reliable conclusions may be safely drawn. Many practical situations arise within a given organization which often are purely matters of policy. Where this condition of affairs exists, the classification must be devised to meet the special situation. In some cases, allocation of expenses when ascertained, is a matter of arbitrary decision on the part of the administration. Unfortunately, outside factors, such as income tax laws, have influenced practice on this point. So long as influence of outside factors is permitted to control allocation of expense items, just so long will the limitations of scientific classification be manifested.

PROCEDURE IN CLASSIFICATION WORK.—That a proper classification of accounts may be prepared, it is necessary to survey the conditions

of a given business. Broadly speaking, there are two conditions under which classifications are prepared: the first, that of an entirely new venture just commencing operations; second, that of an existing organization.

Taking up the latter condition first, one has here some basis for study. A complete analysis of operations of the undertaking is required. It may be helpful to remember that expenses may be classified in many ways, depending on the purpose for which the classification is required. One should study the form of organization and control under which the particular business operates. The **prime purpose** is to locate responsibility, and responsibility depends upon the type of control which the organization employs in conducting its affairs. Often these factors are found to be as follows: production is in charge of one official or partner or manager; distribution or sales in charge of a second; financing in charge of a third. Under this scheme of operation, the classification of accounts should be devised so as to direct the attention of the management to the group of related expenses. An analysis of past operations discloses what the expenses have been under the several functional divisions. Accounts should be provided for each element of expense which past experience reveals as relatively important from the functional point of view. In determining whether or not a special account should be provided for any special element, consideration should be given to the following facts: (1) expenses tend to increase rather than to decrease; (2) relatively insignificant factors today may be vital factors next year; and (3) volume of business directly influences the importance of any special account.

A perplexing problem faced in this work is the fact that scarcely any two businesses are exactly alike in all respects. There are differences in volume of business transacted, differences in personnel and management, differences in size and nature of operations. Manifestly, discrimination cannot be so carefully made in businesses where volume of business amounts to $50,000 as where it is ten times as great.

TENTATIVE CLASSIFICATIONS ADVISABLE.—Unless the system builder has had an unusually wide range of experience, it is probably better to attempt a tentative classification only at the outset. Experience will serve as a safe guide for future revisions. Moreover, the form of organization and control may often be changed as a result of facts disclosed by the tentative classification. Bearing in mind the pertinent local conditions, the procedure is in many cases somewhat as outlined below.

PLANT AND EQUIPMENT CLASSIFICATION.—Present value of plant equipment must be ascertained. This should be arranged to show value of equipment employed in functional processes or departments. If this is done proper allocation of depreciation charges to product passing through the department may be provided for and, in addition, the management will be able to determine whether or not the proper balance has been preserved in the investment in equipment for the several functions or processes. Repair costs naturally follow a similar classification. Any proposed expenditure for new equipment must be justified in the light of the present investment and needs of the organization or the productive process. This method of procedure provides for a definite and effective control of the investment in equipment and proposed investments in additional equipment and, if properly arranged, permits of redistribution physically or statistically as occasion requires. It leads directly to the next step, namely, preparation of an annual budget for additional equipment, for repairs and

maintenance of present equipment, and for preparation of depreciation schedules and investment schedules for insurance purposes.

MANUFACTURING EXPENSE CLASSIFICATION.—These expenses arise in production of the commodity or service offered for sale. No expenses should be included in this group which are not under direct control and influence of the production manager. While it would seem to be a simple matter to determine this, in practice many perplexing problems must be solved. In some cases, desire to obtain unit costs brings up problems in distribution of intradepartmental expenses and in allocation of indirect expense items. At least, the classification may provide for determination of those expenses which are direct in nature and about which there is no question, allowing for the separate showing of items about which some question may arise. Moreover, from year to year, as production changes, the importance of any one element may vary correspondingly.

SELLING EXPENSE CLASSIFICATION.—There is usually less difficulty in working out a suitable classification for this class of expenses than in case of production expenses. This class includes all expenses incurred in marketing and distributing the product or service offered for sale, and it should not include items not under direct supervision and control of the responsible head of this division of the business. Subclassifications by territories or products are often desirable. Few undertakings are able to show what the marketing costs of any particular product are, and probably one of the greatest fields for future effort lies in the direction of marketing research. The expense classification provided for this group may depend upon the classification provided for the sales. The introduction of mechanical devices for the purpose of building up summaries of classes of goods or service sold as well as distribution by territories is often a valuable aid to management.

FINANCIAL EXPENSE CLASSIFICATION.—In many businesses, expenses incurred in planning for the receipt and disbursement of funds, raising of money for capital purposes and other incidental elements of financing, are of large proportions. In some cases, one of the vice-presidents may have this special phase of the work in his sole charge and custody. Where there is a separate office to handle the finances, the expense classification should be devised to provide for their control.

ADMINISTRATIVE EXPENSE CLASSIFICATION.—These expenses comprise all expenses not provided for above. The detail with which these expenses should be classified depends upon a number of circumstances, but perhaps the principal element in determining whether or not a special account shall be raised for any particular element is the amount of money involved.

RELATION OF ACCOUNT CLASSIFICATION TO BUDGET-MAKING.—Use of the budget system is growing in business and a properly prepared and corrected budget is almost essential to a modern organization. Installation of a proper system of account classification is a preliminary to scientific budget-making. Hence, while the classification serves to measure efficiency of management, it also paves the way for budget-making. Budgets imply the allocation of responsibility; on this account the preliminary study of the form of organization has been emphasized in preparation of a classification of accounts.

OTHER EXPENSES.—In some instances, business organizations have expenses that do not fall within the above general classifications. They

may or may not be important; frequently these items fluctuate widely in amount and importance from year to year. The classification of accounts must provide for them, but owing to the uncertain nature of the items, no general provision can be made for them until they arise.

ASSET AND LIABILITY CLASSIFICATIONS.—Reference has already been made to many of the factors which govern the preparation of a classification of accounts for these items, exclusive of plant and property. It may be well, however, to refer again to the fact that while the plant and property classification by functions is essential, this may not furnish the necessary subdivision of the assets so as to show the various legal interests that may hold equities in the several units of property. More attention has been devoted to classification of property and equipment by functions or departments than to classification by legal interests. The latter may or may not be of vital importance, but should be noted for its possible effect upon the financial statement to be submitted to investors or creditors.

ACCOUNT CLASSIFICATION FOR NEW VENTURES.—The problem of providing suitable classifications for new businesses is more difficult. If the system builder has had experience in a similar undertaking, his experience will afford useful suggestions. If he lacks this experience, careful study of the organization and processes is necessary. The imagination must often be drawn upon and the classification of accounts at the outset must be of the most temporary character. The general outline discussed above should be followed in most cases. If the accountant can follow the transactions from month to month during the first year, the system of accounts provided at the outset may be extended as need develops. The accounts of the earlier months may be analyzed and redistributed to conform with the amended classification. At end of first year of operation, the classification of accounts should assume more definite form and scope.

FUNDAMENTAL BASIS OF CLASSIFICATION.—The fundamental basis of classification consists in enumerating all the elements of assets, expenses, liabilities, and income. These elements must be carefully considered for their possible effect and importance in the final results—the balance sheet and income account. This is the **process of analysis.** To avoid having too many accounts in the general ledger, it may be desirable to provide subsidiary ledgers in which to carry some of the detail accounts; especially if a cost system is contemplated. In the latter event, controlling expense accounts may be provided in the general ledger or in the cost ledger and detail accounts in subsidiary ledgers. Where the accounts are numerous by reason of the necessity of providing for details, expense controls are established for the purpose of grouping. This is the **process of synthesis.** As a rule, it is not possible to provide in advance for all accounts required. Some may be regrouped or abandoned, if experience shows this to be desirable. Certain accounts may have to be redistributed. Good classifications are not developed immediately. Tentative classifications must be studied and modified to suit the requirements of particular cases. This involves much study and experimentation.

Symbolization

USE OF SYMBOLS.—Two systems of account designation are commonly used—the **mnemonic** and the **numeral** systems. A third system sometimes employed is a combination of both. Under mnemonic systems, letters are

intended to remind the reader of the words for which they stand. Hence one symbol can mean but one thing at any one time.

Each of the two systems has its **advantages** and **disadvantages.** The decimal or numeral system cannot be made mnemonic and so does not aid one to remember what the symbol stands for. In the second place, there are 26 letters in the alphabet as against 10 digits in the arabic system of notation. In practice, letters I, O, Q, and Z are usually omitted, because O, I, and Z are frequently taken for the numerals 0, 1, and 2, respectively, and the letter Q is difficult to make. If **lower case** as well as **capital letters** are used, there are 44 available characters under the mnemonic system. In designating factory operations, the addition of the small letter "g" is frequently employed to indicate words ending in "ing" thus, **"Bg"** would be for **boring** and **"Dg"** for **drilling.**

On the other hand, where tabulating devices are used, the mnemonic system is not advantageous, as these machines do not lend themselves to this system. The mnemonic system frequently requires the use of 6 or 7 letters to designate a function or operation or piece of machinery, and thus the use of a key is as necessary under this method as it is under the numeral system.

NUMERICAL SYSTEM.—The general ledger accounts are divided into nine fundamental groups, as follows:

1 Asset Accounts (other than investments and prepaid items)
2 Investments
3 Prepaid Items
4 Liabilities (other than accrued items)
5 Accrued Items
6 Valuation Reserves
7 Capital and Surplus
8 Income
9 Expense Accounts

Under this plan, these groups may be further subdivided into groups of nine. For example:

1 ASSET ACCOUNTS

11 Fixed Assets
- 111 LAND
  - 1111 Plant land actually used in operations
    - 11111 Details in subsidiary ledgers
  - 1112 Other land capital
    - 11121 Details in subsidiary ledgers
- 112 LAND IMPROVEMENTS
  - 1121 Improvements on plant land
    - 11211 Details in subsidiary ledgers
  - 1122 Improvements on other land capital
    - 11221 Details in subsidiary ledgers
- 113 BUILDINGS
  (Subdivided to suit the needs of the case)
- 114 MACHINERY

11 Fixed Assets *Continued*
- 115 TOOLS
- 116, 117, 118, 119 } Open numbers for further accounts as needed.

12 Current Assets
- 121 CASH IN BANK
  - 1211 First National Bank
  - 1212 Union Trust Company
- 122 PETTY CASH
- 123 NOTES RECEIVABLE
- 124 ACCOUNTS RECEIVABLE
- 125 INVENTORIES
  - 1251 Raw materials
  - 1252 Work in process
  - 1253 Goods in process
  - 1254 Finished goods
- 126, 127, 128, 129 } Open numbers for further expansion.

The foregoing serves to illustrate the method employed in designating the asset and liability accounts. The following illustrates the plan as it relates to expense accounts. Assume that account 93 is the control account for administration expense, and that account number 94 is the control account for selling expense. The control accounts appear in the general ledger while details appear in cost ledgers:

Administration Expense Accounts

		General Ledger	Cost Ledger Subdivisions
Administration Expense	**93**		
Administration Salaries		931	
Executive salaries			9311
Clerks' salaries			9312
Stenographers' salaries			9313
Bookkeepers' salaries			9314
General Administration Expense		932	
Stationery and office supplies			9321
Telephone and telegraph expense			9322
Postage			9323
Depreciation			9324
Insurance			9325
Taxes			9326
Life insurance premiums			9327
Executives' traveling expenses			9328
Directors' fees			9329
Donations			9330
Legal expense			9331
Pensions			9332
Subscriptions and dues			9333
Welfare work			9334

Selling Expense Accounts

		General Ledger	Cost Ledger Subdivisions
Selling Expense	**94**		
Selling Departmental Salaries		941	
Sales managers' and salesmen's salaries			9411
Salesmen's commissions			9412
Clerks' salaries			9413
Stenographers' salaries			9414
Advertising		942	
Traveling Expense		943	
Samples		944	
Stable and Garage and R. R. Siding and Equipment Expense		945	
Warehouse, Finished Stock		946	
Labor			9461
Materials			9462
Light, heat, and power			9463
Maintenance and repairs			9464
Depreciation			9465
Taxes on finished stock and warehouse			9466
Insurance on finished stock and warehouse			9467
Freight on Leather		947	
Miscellaneous Sales Expense		948	
Stationery and office supplies			9481
Telephone and telegraph expense			9482
Postage			9483
Depreciation			9484
Taxes			9485

	General Ledger	Cost Ledger Subdivisions
Insurance		9486
Light, heat, and power		9487
Welfare work		9488
Refinishing Expense	949	

COMBINATION OF LETTERS AND NUMBERS.—A combination of letters and numbers may be desirable. The following classification illustrates the principle employed under this system:

1 MANUFACTURING PLANT

Condensed Accounts	Subaccounts	Further Subdivisions
A. Land	a. Land	1 Land—purchase price 2 Land—grading and improvements
B. Buildings	a. Buildings	1 Buildings 2 Buildings—grading and filling
	b. Structures	1 Structures 2 Water, drainage and sewer pipes (outside) 3 Piping and electrical conductors (outside)
	c. Sprinkler System	
	d. Heating and Ventilating, and Other Inside Piping and Wiring	1 Heating and ventilating 2 Other inside piping and wiring
C. Machinery and Tools	a. Machinery	1 Machines 2 Electrical apparatus 3 Ovens and furnaces 4 Power plant and equipment
	b. Machinery Foundations and Installations	1 Foundation for machinery and apparatus 2 Installation of machinery
	c. Semi-durable Tools and Instruments	1 Semi-durable tools 2 Electrical equipment 3 Molds, jigs, punches, dies and special tools 4 Metal flasks
D. Patterns and Drawings	a. Patterns b. Drawings	
E. Furniture, Fixtures, and Appliances	a. Ship Fixtures and Equipment b. Furniture and Appliances in Factory Office c. Fire Protective Apparatus	
F. Other Equipment	a. Other Equipment	1 Railway tracks and overhead equipment 2 Rolling stock 3 Automobile and other conveyances
G. Unfinished Plant	a. Building b. Machinery and Tools c. Furniture, Fixtures, and Appliances	

MNEMONIC SYMBOLS IN STORES ACCOUNTING.—The mnemonic system is sometimes used in stores accounting, a special symbol being assigned to each kind of stores. This reduces the amount of writing required to make out requisitions. If the stores are arranged in the stockroom according to symbols, it makes for ease in locating them. In a large storeroom where the stores are of varying sizes, or of great variety, either the varying sizes of the stores require them to be arranged in other than the order indicated by the symbols, or their variety is such that their designation loses the mnemonic quality due to the number of letters required in consequence.

Note.—For additional data on symbolization and classification consult the Index for headings of such subjects discussed elsewhere, and, in particular, the sections on "Accounting Principles" and "Inventories."

Uniform Classifications

Classifications of accounts have been devised by the following groups of industries:

American Association of Flint and Lime Glass Manufacturers
American Bakers Association
American Boiler Manufacturers Association
American Drop Forging Institute
American Face Brick Association
American Foundrymen's Association
American Malleable Castings Association
American Photo Engravers Association
American Trade Spice Association
American Washing Machine Manufacturers Association
Associated Knit Underwear Manufacturers of America
Associated Wooden Ware Manufacturers
Atlantic Coast Shipbuilders Association
Biscuit and Cracker Manufacturers Association
Box Board Manufacturers Association
Bureau of Envelope Manufacturers of America
Casket Manufacturers Association of America
Central Bureau of Dining Table Manufacturers
Conveyor Machinery Manufacturers Association
Engravographia
Folding Box Manufacturers National Association
Grinding Wheel Manufacturers Association of United States and Canada
Institute of American Meat Packers
International Association of Electrotypers
International Stamp Manufacturers Association
Laundryowners National Association
Millwork Cost Information Bureau
National Association of Box Manufacturers
National Association of Brass Manufacturers
National Association of Chair Manufacturers
National Association of Corrugated and Fibre Box Manufacturers
National Association of Employing Lithographers
National Association of Farm Equipment Manufacturers
National Association of Hosiery and Underwear Manufacturers
National Association of Ice Industries
National Association of Stove Manufactures
National Association of Upholstered Furniture Manufacturers
National Bottle Manufacturers Association
National Coffee Roasters Association
National Commercial Fixtures Manufacturers Association
National Confectioners Association of the United States
National Council Lighting Fixtures Association
National Fertilizer Association
National Lime Association
National Machine Tool Builders Association
National Paper Box Manufacturers Association
National Pickle Packers Association
National Tent and Awning Manufacturers
National Veneer and Panel Manufacturers Association
News Print Service Bureau
Optical Manufacturers Association
Paint Manufacturers Association of the United States
Portland Cement Association
Power Piping Society
Prepared Roofing Association
Railway Car Manufacturers Association
Steel Barrel Manufacturers Association
Sterling Silverware Manufacturers Association
Tanners Council of the U. S. A.
United Typothetae Manufacturers Association
West Coast Lumbermen's Association
Wirebound Box Manufacturers Association

Public Utilities Classifications[1]

INVESTIGATION OF SENATE SELECT COMMITTEE.—In 1885 a Senate Select Committee was appointed to investigate interstate commerce in order to obtain information as a basis for interstate commerce legislation. Invitations were extended to all important organizations, corporations, and railroad commissions to express themselves. Circular letters containing 15 specific questions designed to obtain full knowledge of the opinions of the parties concerned were sent out. Hearings were subsequently held in many commercial centers throughout the country. Regarding accounting of public utilities doing interstate commerce, the following question was put: "Should corporations engaged in interstate commerce be required to adopt a uniform system of accounts?" Of 30 parties interrogated, 21 favored a uniform system, 7 thought it might not be necessary, and only 2 considered it unwise and burdensome.

INTERSTATE COMMERCE ACT.—This Act, passed in 1887, provided "that the commission is hereby authorized to require annual reports from all common carriers subject to the provisions of this act, to fix the time and prescribe the manner in which such reports shall be made, and to require from such carriers specific answers to all questions upon which the commission may need information . . . . and that said commission may, within its discretion, for the purposes of this act, prescribe (if in the opinion of the commission it is practicable to prescribe such uniformity and method of keeping accounts) a period of time within which all common carriers subject to the provisions of this act shall have, as near as may be, a uniform system of accounts, and the manner in which such accounts shall be kept."

INTRODUCTION OF UNIFORM SYSTEMS OF ACCOUNTS.—Shortly after passage of the Act, circulars were issued (October, 1887) to all carriers, state commissions, and interested parties, inviting them to public sessions of the commission which were held at Washington, and experimental blanks were distributed. Much assistance was given the Commission in the way of suggestions and constructive criticism by the American Railways Accounting Officers Association and the state commissions. In 1888 the first tentative form was submitted to corporations subject to the act, to which questions they were asked to reply. This was one of the first steps in bringing about uniformity of accounts of kindred corporations, and included the following questions:

1. History of company
2. Organization
3. Officers
4. Property operated
5. Capital stock
6. Funded debt
7. Floating and current liabilities
8. Permanent improvement for year
9. Cost of road and equipment
10. Income account
11. Income account (for roads under lease only)
12. Earnings from operation
13. Bonds owned
14. Stock owned—miscellaneous income
15. Operating expenses
16. Operating expenses (continued)
17. Rentals paid
18. General balance sheet
19. Financial operations for year
20. Important changes during year
21. Contracts, agreements, etc.
22. Security for funded debt
23. Employees and salaries
24. Passenger, train, and mileage
25. Freight, traffic movement (company's material excluded)
26. Description of equipment
27. Mileage of road operations (renewals of rails and ties)
28. Consumption of fuel by locomotive
29. Characteristics of road
30. Characteristics of road (continued)
31. Oath

[1] See also section on "Public Utilities."

At the convention of the state railway commissioners on Mar. 5, 6, and 7, 1888, at Washington, co-operation with the Interstate Commerce Commission was promised and a resolution was adopted at said convention to the effect that "it is the sense of this convention that a method of collecting and publishing statistics, both as to time and matter, should be adopted." A committee, consisting of seven members, one each from five states, one interstate commerce representative, and the president of the Association of American Railways Accounting Officers, was appointed to revise forms of reports.

The second step in unifying the system of accounting was brought about through the co-operation and suggestions of the Association of American Railways Accounting Officers. A subcommittee appointed by them to revise forms reported advisable certain changes, stating "that if these changes are adopted by the commission very many roads will be induced to adapt their accounts to that of the Interstate Commerce Form."

AMENDMENT OF ACT.—The Interstate Commerce Commission, after a few years of practical application of the law, soon found that the 20th section, dealing with reports and accounts, had to be made more drastic and penalties provided for transgressions. Recommendations were repeatedly made to Congress by the Commission to amend that part of the Act in such way as to make its enforcement possible. A Bureau of Statistics and Accounts, to supervise the public utilities more closely and to bring about more easily a uniform system of accounts, was proposed.

On June 29, 1906, the "Act to Regulate Interstate Commerce" was amended to grant ample authority to prescribe a uniform system of accounts for railways and for other common carriers subject to the Act. It provided that "in case of failure or refusal on the part of any such carrier, receiver, or trustee to keep such accounts, records, and memoranda on the books and in the manner prescribed by the commission, or to submit such accounts, records, and memoranda as are kept to the inspection of the commission or any of its authorized agents or examiners, such carrier, receiver, or trustee shall forfeit to the United States the sum of five hundred dollars for each such offense and for each and every day of continuance of such offense, such forfeitures to be recoverable in the same manner as other forfeitures provided for in this act." This enabled the Commission, first, to obtain accurate knowledge of intercorporate relations of the carriers and, secondly, to revise the various classifications of the operating expenses, and operating revenues, detailed accounting rates for which were issued June 3, 1907, as well as balance sheet items, effective July 1, 1908. The amended laws, further, placed "express companies, sleeping-car companies, pipe lines, and electric lines under the jurisdiction of the Commission so far as they are interstate in character."

BUREAU OF STATISTICS AND ACCOUNTS.—On July 10, 1907, the Commission issued an order prescribing a form of monthly reports of earnings and expenses. These reports were published beginning July, 1908, and furnished a good barometer of business conditions. The Bureau of Statistics and Accounts was established, with an organization of a Board of Examiners. On June 21, 1909, by order of the Commission, a revised classification of expenditures for additions and betterments and a form of general balance sheet were published. By the Act of June 18, 1910, telegraph, telephone, and cable companies, so far as they did interstate commerce, were placed under jurisdiction of the Commission. In 1912 classifications of accounts for steam roads were included, together with classifications of oper-

ating revenues and operating expenses, expenditure for road and equipment, for additions and betterments, classification of revenues and expenses for outside operations, of locomotive-miles, car-miles and train-miles; a form of general balance sheet and statement of income and profit and loss were also in preparation.

For electric railways and express companies a uniform classification of operating revenues and operating expenses, and a classification of expenditures for road and equipment was ready, and forms of a general balance sheet and statement of income and profit and loss were under consideration. For pipe lines, sleeping-car companies, telephone, telegraph companies, and carriers by water, orders for a uniform classification were issued May 31, 1910. The Commerce Court enjoined the order temporarily on October 5, 1911. On Apr. 1, 1912, however, the Supreme Court of the United States decided that ". . . . the uniform system of accounting prescribed and the report called for are such as it is within the power of the Commission to require under section 20."

After this decision of the Supreme Court, the Interstate Commerce Commission issued the classifications for carriers by water, effective Jan. 1, 1913, and July 1, 1913; for telephone companies, Jan. 1, 1913; and for telegraph companies, January, 1914. Further revisions of accounting classifications for steam railways, electric railways, and express companies were made effective July 1, 1914, the tendency of these revisions being in the direction of development rather than change in principle. The following table[2] shows progress made in bringing about uniformity of accounting for public utilities by issuing strict regulations for classification of accounts.

Steam Roads	Effective Date
Classification of Operating Revenues and Expenses	July 1, 1914
Classification of Operating Expenses Condensed	"
Classification of Investment in Road and Equipment	"
Classification of Train-miles, Locomotive-miles, and car-miles	"
Classification of Income, Profit and Loss, and General Balance Sheet	"
Interpretations of Accounting Classifications	"
Regulations to govern the Destruction of Records	July 1, 1915
Regulations to govern the Issuing and Recording of Passes	Jan. 1, 1912
Electric Railways	
Uniform System of Accounts	July 1, 1914
Interpretations of Accounting Classifications	July 1, 1915
Regulations to Govern the Destruction of Records	May 1, 1913
Carriers by Water	
Classification of Operating Expenses	Jan. 1, 1911
Classification of Operating Revenues	"
Form of General Balance Sheet	Jan. 1, 1913
Classification of Expenditures for Real Property and Equipment	"
Classification of Income, Profit and Loss Accounts	"
Regulations to govern the Destruction of Records	"

[2] Twenty-ninth Report of the Interstate Commerce Commission, 1915, Washington, Government Printing Office, 1915, p. 42.

	Effective Date
Express Companies	
Uniform System of Accounts	July 1, 1914
Interpretations of Accounting Classifications	July 1, 1910
Regulations to govern the Destruction of Records	July 1, 1915
It is the present intention to revise the interpretations of accounting classifications and also to publish regulations to govern the issuing and recording of franks.	
Pipe-Line Companies	
Classification of Investment in Pipe Lines, Pipe-Line Operating Revenues, and Pipe-Line Operating Expenses	Jan. 1, 1915
Regulations to govern the Destruction of Records	July 1, 1915
This system of accounts to be completed by the issuance of a classification of income, profit and loss, and general balance sheet accounts.	
Sleeping-Car Companies	
Classification of Revenues and Expenses of Sleeping-Car and Other Operations	July 1, 1912
Regulations to govern the Destruction of Records	Oct. 1, 1912
Telephone Companies	
Uniform System of Accounts (Classes A and B)	Jan. 1, 1913
Uniform System of Accounts (Class C)	Jan. 1, 1915
Regulations to govern the Destruction of Records	Feb. 1, 1914
Telegraph and Cable Companies	
Uniform System of Accounts	Jan. 1, 1914
Regulations to govern the Destruction of Records	Feb. 1, 1914

Until the year 1916, the annual reports, except for telephone companies and carriers by water, covered a period ending June 30. On Nov. 24, 1916, however, the Commission ordered the period changed to Dec. 31. In 1918 transportation carriers by the act passed Mar. 21, 1918, were temporarily put under Federal control with ample enlargement of accounting staff of the Commission. Federal Control was exercised over transportation carriers until Mar. 1, 1920, whence they were returned to private ownership with a certain income guaranteed by the government for six months; on Sept. 1, 1920, they finally were again privately operated, with no guaranty but with public regulation.

STATE REGULATION OF PUBLIC UTILITIES.—The State of New York supervised public utility corporations in a general way by legislative acts as early as 1855. It was not until 1907, however, that effective supervision over public utilities was exercised. "The Public Service Commission Law was originally enacted as chapter 429 of the laws of 1907, which became a law June 6, 1907, and took effect July 1, 1907. It was made Ch. 48 of the Consolidated Laws by Ch. 480 of the laws of 1910, in effect June 14, 1910." A uniform system of accounts was established by Art. III, Sec. 52, of the Public Service Law, which prescribed that "each commission may, whenever it deems advisable, establish a system of accounts to be used by railroad and street railway corporations or other common carriers which are subject to its supervision, or may classify the said corporations and other carriers and prescribe the manner in which such accounts should

be kept. . . . . The system of accounts established by the commission and the forms of accounts, records and memoranda prescribed by it as provided above shall conform in case of railroad corporations as nearly as may be to those from time to time established and prescribed by the Interstate Commerce Commission under the provisions of the act of Congress entitled 'An Act to Regulate Commerce approved Feb. 4, 1887, and the acts amendatory thereof or supplementary thereto. . . . . Where the commission has prescribed the form of accounts, records or memoranda to be kept by such corporations it shall be unlawful for them to keep any other accounts, records or memoranda than those prescribed or those prescribed by or under authority of the United States."

Comparison of I. C. C. Regulations with Those of P. S. C. of New York.—Accounts of railroad and street railway corporations are largely modeled after those of the Interstate Commerce Commission. A uniform system of accounts for such corporations was prescribed by the Public Service Commission, Second District, on Aug. 20, 1918, to go into effect after Jan. 1, 1919. In most cases where the classification of these accounts differs from those prescribed by the Interstate Commerce Commission, the differences are merely subdivisions of the latter. Corporations in New York subject to the Interstate Commerce Commission, must nevertheless (for the Public Service Commission of New York) set up subaccounts under each of the operating expense accounts listed in the groups "Way and Structures" and "Power," to cover any charges that may be made to operating expenses for retirement of losses (realized depreciation) not covered by reserves. In the classification of the Interstate Commerce Commission such losses are charged to the proper maintenance accounts in case of retirements of way and structures, and of power plant, buildings, and equipment; other equipment retired, however, is charged to the account "Equipment Retired." The state classification requires the above charges to be charged to accounts "Way and Structures Retired" and "Power Plant, Buildings, and Equipment Retired."

All commissions, however, whether federal or state, require of public utility corporations that definite provision should be made for **depreciation of fixed assets.** The practice is generally followed to keep the plant value at original cost and to set up reserves for depreciation sufficient to offset depreciation. Intangible assets are generally not recognized, unless actual payments have been made for the same. On the other hand, one instance may be cited in which the interpretation of accounts slightly differs. The expense "Discount on Bonds" in the classification of the Wisconsin Commission appears as a portion of property cost, whereas in the classification of the New York Commission it appears as an item of "Unamortized Debt Discount Expense."

Electrical and Gas Corporations.—Electrical corporations were ordered to establish a uniform system of accounts by the Public Service Commission of New York on Oct. 21, 1908, the order stating that "on and after Jan. 1, 1909, every electrical corporation shall keep upon its books the accounts prescribed . . . . so far as the said accounts are pertinent to the facts and circumstances of said corporations." A pamphlet containing operating revenue and operating expense accounts and balance sheet accounts, with information and instructions, was issued as of Oct. 21, 1908, and copies forwarded to all such corporations.

On Dec. 16, 1908, the Public Service Commission of New York ordered all gas corporations to keep their accounts in form prescribed by the Com-

mission. The general scheme of accounts issued was similar to that of the electrical companies and pamphlets with full classification and information were sent to such gas corporations.

Telephone Companies.—The laws of the State of New York (Ch. 673, of the Laws of 1910, Sec. 95, p. 2) provide that "the commission may establish a system of accounts to be used by telegraph corporations and telephone corporations, which are subject to its jurisdiction, and are required to make annual reports to it or classify the said corporations, and prescribe a system of accounts for each class and may prescribe the manner in which such accounts shall be kept." On Nov. 13, 1911, the Public Service Commission ordered that a uniform system of accounts be adopted such as prescribed by the Commission, and that a copy of such uniform system of accounts for telephone corporations be sent to every such corporation in this state. The telephone companies were further required to keep their accounts in conformity with these orders and printed instructions not later than and after Jan. 1, 1912.

Massachusetts.—Public utility corporations in Massachusetts have been under control of that state since 1857 and specific legislation has been enacted affecting the system of accounts of certain public utility corporations.

Railroad and Street Railways.—Acts of 1876, Massachusetts (Ch. 185 Sec. 1), provided that "the board of railroad commissioners shall before the first day of September, 1876, prescribe a system upon which the books and accounts of corporations operating railroads, or street railways, shall be kept in a uniform manner." With respect to forms of annual returns and changes in such returns, the Acts of 1906 (Ch. 463, Sec. 20) provide that "the board shall prescribe the form for the annual returns to be made by railroad corporations and street railway companies may, from time to time, make changes and additions in such forms, and shall give to the corporations and companies one year's notice of any changes or additions which require an alteration in the method or form of keeping their accounts." The Acts of 1913 (Ch. 784, Sec. 12) specify that "the commission may from time to time establish and prescribe a system of forms of accounts to be used by the common carriers subject to its supervision, or may classify the said common carriers and prescribe a system of forms of accounts for each class. The accounts of all such common carriers shall be kept in accordance with the forms prescribed. The commission may also in its discretion prescribe the forms of records and memoranda to be kept by such common carriers. The forms of accounts established by the commission and the forms of records and memoranda prescribed by it shall conform as nearly as may be to the similar forms from time to time established and prescribed by the interstate commerce commission." For the above utilities the annual reports and classification of accounts are the same as prescribed by the Interstate Commerce Commission.

Gas and Electric Companies.—For gas and electric companies, acts governing accounts were passed in Massachusetts in 1886 and 1887, respectively. The Acts of 1886 (Ch. 346, Sec. 2) provide that "Commencing on the first day of July in the year 1886 every company engaged in the manufacture and sale of gas shall keep its books and accounts in a form to be prescribed by the board of gas commissioners." In 1887 (Ch. 382, Sec. 2, of the Acts of 1887) the foregoing provision for gas companies was extended to include electric light companies. By legislative measure (Ch. 164 of the General Laws, Sec. 83) it was further enacted that "gas and electric companies and manufacturing companies and persons engaged in the manufac-

ture and sale or distribution and sale of gas or electricity shall annually, on or before such date as the department fixes, make to the department, in a form prescribed by it, a return for the year ending on such date as the department may from time to time require, signed and sworn to by the president and treasurer and a majority of the directors, of the amount of their authorized capital, their indebtedness and financial condition, on the said date, their income and expenses during the preceding year, their dividends paid and declared, a list of the names of all their salaried officers and the amount of the salary paid to each, and the balance sheet of their accounts as of said date."

SECTION 10

VALUATION

CONTENTS

SECTION 10

VALUATION

PURPOSES OF VALUATIONS.—Valuation principles apply to all balance sheets, but aside from the process of interpretation of balance sheet items for routine purposes, valuations are made for the following purposes:

1. Rate regulation of public utilities.
2. Purchase and sale.
3. Adjustment of fire losses.
4. Liquidation, as in bankruptcy and voluntary dissolutions.
5. Taxation.

VALUE.—The term "value" is interpreted in many ways. The director of the Valuation Bureau of the Interstate Commerce Commission states that to arrive at "fair value" it is necessary to marshal every fact obtainable with respect to the present condition and the past history of our railways. The concept "value" is usually qualified by the addition of a descriptive term, as "fair value," "service value," "exchange value," "going value," "market value," "physical value," etc. By value economists usually mean "exchange value," but no single abstract concept can ordinarily be applied to the practical problems with which the accountant deals. In a rate case Chairman Stevens of the New York Public Service Commission, Second District, states that value in exchange is not the proper basis in a rate case because it depends upon the rate. "To base the rate upon the exchange value would be generally merely to continue the rate, and it would absolutely continue it so far as the value is dependent upon the rate. If the change in rate affects the net income, it changes the exchange value; and if there be no change in exchange value there can be no change in rate."

Kester enumerates the following kinds of value:

1. Cost value.
2. Market value.
3. Sales price value.
4. Reproduction cost value.
5. Scrap, salvage, junk, or break-up value.
6. Service value.
7. Present or depreciated value.
8. Tangible or physical value.
9. Intangible value.
10. Earning value or earnings—capitalized value.
11. Liquidation or forced-sale value.

RELATION OF VALUATION TO ACCOUNTING.—The apparently exact results secured by double-entry methods are modified to a greater or less extent by the **valuation factor.** In any valuation there is always an element of error present, that is, a valuation is merely an estimate, and actual value, in many

instances, is what the assets turn out to be worth as factors in production of salable products, which is difficult or impossible to forecast. However, as long as valuations are carried out on uniform principles, the results are not affected so far as value for comparative purposes is concerned. It is for this reason that in some cases it is desirable to avoid current market fluctuations in making valuations. E. G. Prettyman,[1] writing on farm accounting, describes these bases as follows:

> There are **two systems of valuations** either of which can legitimately be followed. The first, and, in my opinion, the wisest method is that of keeping the value of all crops and stock at a **uniform level** which would usually represent their cost or value when the farmer entered, and which would, in most cases, be what is now known as pre-war value. So long as the valuation is uniformly maintained at this level, any sales at a higher or lower figure afford an accurate comparison from which profit or loss can be deduced, either for the farmer's own information or for income tax purposes. Also any profit or loss arrived at in this way practically coincides with the actual cash profit or loss, as a result of which income tax only becomes payable when there is actual profit, and when there is an actual loss a rebate is obtained.
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> The **other system** is equally correct and perhaps more orthodox in principle, but is not, in my opinion, so satisfactory. It is to prepare the valuation annually according to the prices ruling at the moment. A valuation so made is liable to the errors referred to above, although the first of them is reduced to a minimum; but, for the reasons given, I am of opinion that this advantage in no way compensates for the loss of uniformity. A valuation prepared on this basis brings into account for income tax purposes any increase or decrease in the value of stock and crops, including those which are not sold but remain permanently or are consumed on the farm. This tends to inflate profits at a time of rising prices and to accentuate losses when prices are falling; these profits or losses may never materialize, although they would become a reality in any accounting year during which the farmer quitted his holding, but this does not affect the argument, as the subjects valued would then be converted into actual cash and would be accounted for accordingly.

VALUE vs. COST.—Some writers see a close relation between cost and value, but in valuations for rate purposes other considerations than cost are involved. As a result, various **valuation theories** have been evolved. No court assumes that cost as shown by cost of property account in the balance sheet represents fair present value or even money actually invested. Abandonments, improvements, consolidation, and reorganizations, issue of securities at other than par value, and so on, make such an assumption untenable.

In general, the various valuation theories which have been evolved represent modifications of the original cost theory and the cost of reproduction new theory. Owing to recent price tendencies, the former is favorable to the public, the latter to the utilities. As a result, the earlier tendency to emphasize original cost has been displaced by a tendency to emphasize cost of reproduction, due weight being given to local circumstances.

VALUATION AFFECTED BY PURPOSE.—It is generally conceded that the method of treating **intangible elements** in valuations should vary with the purpose of the valuation. A valuation for rate-making or sale may be higher than one for purposes of security issue or taxation. Sometimes the cost of physical property should be excluded in making valuations for taxation, because such cost is in itself a form of tax. Paving is an illustration. **Donated property** may be included for purchase or taxation, but be excluded in fixing rates. Sometimes items are included to which a company does not possess a legal title, as where pavement and piping are altered when a railroad is constructed through a city.

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[1] *The Accountant*, Feb. 10, 1923, p. 237.

Valuation of Utilities

VALUATION FOR TAXATION vs. VALUATION FOR RATES.—Commissioner Wood, of the Indiana Railroad Commission, says:

With reference to taxation values in the State of Indiana, we hold that this is not the value upon which the carriers can claim a rate. We hold that they are entitled to earn and pay to the State whatever assessment is made against them, no matter on what method the assessment may be made, and that the amount paid must be allowed to them just as the cost of operation is allowed to them, but on the other hand, the taxation value is not the value upon which to base the rate, but the rate must be based upon the amount which they have invested, and not otherwise.[2]

Some cases hold value for rate purposes and value for condemnation or purchase to be the same. In one case[3] it was said:

It is true that this was a condemnation proceeding, and the question was to determine what was just compensation for the appropriation of corporate property to a public use, while the case before this court relates to the fixing of water rates which shall be a just compensation for the appropriation of complainant's property to a public use. It is not perceived that there is any difference in the principles applicable to the two cases, and this appears to have been the view of the Supreme Court in *San Diego Water Co.* v. *San Diego*.[4]

VALUATION FOR RATES AND PURCHASE vs. VALUATION FOR CAPITALIZATION.—A close relation may exist between value for rates and for purchase on the one hand, and value for capitalization on the other. This is true when valuation for rates and purchase is based on cost. If valuation for rates or purchase is based on reproduction cost, there is little similarity between them. As nearly as possible, cost and value for purposes of capitalization should correspond.

VALUATION FOR RATES vs. VALUATION FOR PURCHASE.—In *Fuhrmann* v. *Cataract Power & Conduit Co.*,[5] it was stated that the difference between value for rates and value for purchase is that in the former case the question is how much has been put into the property; in the latter, how much can be gotten out of it.

In *Public Service Gas Co.* v. *Board of Public Utility Commissioners*,[6] Judge Swayze says:

The two bases of valuation may properly be different, since upon a sale or condemnation the probability of an assured income and a continuance of the existing rates enters into and affects the exchange value; while in the case of a valuation for the purpose of fixing a rate, the question is what valuation and rate will tempt the investment of capital, and to what extent existing rates may with justice be lowered.

VALUATION FOR RATES vs. VALUATION FOR TAXATION.—That these are not the same is the contention of the Supreme Court of the United States in the *Missouri Rate Cases*.[7] The New Hampshire Public Service Commission agrees:

. . . for the reason that, in making assessments for purposes of taxation, elements may properly be taken into consideration which are entitled to no weight in fixing a valuation for rate purposes. For example, under the decision of the Supreme Court of New Hampshire in the case of *Fitchburg R. R.* v. *Prescott*,[8] it is held that the franchise

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[2] Quoted in R. H. Whitten, Valuation of Public Service Corporations, Vol. I., p. 7.
[3] 124 Fed. 574, 594–595.
[4] 118 Cal. 556, 50 Pac. 633, 38 L. R. A. 460, decided Oct. 9, 1897.
[5] 3 P. S. C., 2d D. (N. Y.) 656.
[6] 87 Atl. 651.
[7] 230 U. S. 474.
[8] 47 N. H. 67.

of a corporation should be included in an assessment for the purposes of taxation. A franchise is a grant from the public, and it would seem clear that it ought not to be made the basis of charges against the public.

It has been said that "Value is meaningless unless made with reference to some particular object."

G. F. Swain, in his report to the Massachusetts joint board on validation of assets of New York, New Haven & Hartford Railroad Co., says:

The treatment of depreciation, and of abandoned property in particular, should reasonably differ according to the purpose of the appraisal . . .

If the object is to justify existing capital, or to serve as a basis for the issue of new securities, or to fix rates of service, it seems reasonably clear, however, that depreciation should not be allowed for.

There is no inherent inconsistency in using one method of valuation for tax purposes and another method for rate purposes. . . . Methods of ad valorem taxation must be worked out with an eye single to what is just and practicable in taxation, and methods of valuation for rate purposes must be worked out with an eye single to what is just and constitutional in rate-making.

The above quotations represent the **best thought** on the subject.

VALUATIONS FOR RATE-MAKING.—This is the basis of governmental regulation of utility companies. The question of rate regulation first came before the United States Supreme Court in the *Granger Cases* in 1876.[9] Acts regulating rates were upheld on ground that property was affected with a public interest, that regulation of rates was a legislative function, and that the courts were powerless to prevent abuse of this function by the legislature. This doctrine was soon modified and later abandoned. In 1886, Chief Justice Waite said:[10] "It is not inferred that this power of limitation or regulation is itself without limit. This power to regulate is not a power to destroy, and limitation is not the equivalent of confiscation." Yet in 1888, Justice Gray said:[11] "The court has no means, if it would under circumstances have the power, of determining that the rate of 3 cents a mile fixed by the legislature is unreasonable." However, in 1890 the Supreme Court held[12] that it necessarily rests within the jurisdiction of courts to determine the legality of a rate fixed by a legislature or by a commission. In 1898 it was definitely decided[13] that a "fair return" on "fair value" of property used in public service is the **chief basis** for determining reasonableness and constitutionality of rates charged.

In *Smyth* v. *Ames*, the United States Supreme Court enumerated six things[14] to be considered in determining **fair value.** Among these were: "original cost of construction," "present as compared with original cost of construction," and "sum required to meet operating expenses." It was suggested that other than the six factors enumerated might require consideration.

VALUATIONS FOR CAPITALIZATION.—Until recently, but little supervision was exercised over issuance of securities by public service corporations. As a result there have been instances of inflation and stock-watering. Investors have been at a loss to know what was the real equity behind their holdings. **Control of security issues** is an outgrowth of rate control.

Certain principles governing security issues have been developed. In general,

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[9] 94 U. S. 113.
[10] 116 U. S. 307, 331.
[11] 125 U. S. 680.
[12] 134 U. S. 418.
[13] *Smyth* v. *Ames*, 169 U. S. 466.
[14] See Saliers' Depreciation, Principles and Applications, p. 48.

public utilities are not permitted to issue securities to obtain funds to construct facilities not needed or which duplicate facilities already in use. If a sale of securities is needed, the discount, if any, at which they are sold and the manner in which funds secured from their sale are to be expended are prescribed.

Valuations for capitalization and issuance of securities are closely related to the problems of depreciation and obsolescence. If public service commissions are to have adequate control over security issues, they must also have control over depreciation rates and the policy regarding obsolescence and inadequacy.

The Public Service Commission of New York, First District, ordered the New York Railways Co. to reserve 20% of its operating revenues for maintenance and to reserve for depreciation what was not required for repairs and current upkeep. Its predecessor, the Metropolitan Street Railway Co., collapsed largely because of failure to maintain property out of earnings. Renewals had been financed successively through bond issues which were so pyramided that they placed a great and disproportionate burden of fixed charges upon the company. The New York Court of Appeals reversed the decision of the lower court on grounds not of unreasonableness but because the law did not expressly grant to the Public Service Commission the control of financial policies of utilities. The natural solution of the problem is legislation which grants rate-determining power to the commissions. For a detailed discussion of valuations for capitalization, see Chs. XVIII-XX of Saliers' "Depreciation, Principles and Applications."

VALUATIONS FOR TAXATION.—Rules governing tax valuations depend upon tax laws. Fundamentally, such a valuation must be a valuation of **real estate,** a capitalization of **net earnings** which is equivalent to a going-concern valuation, or else a **franchise valuation** made to determine the amount of a franchise tax.

It is often admitted that tax values of physical property ought to be placed below capitalization values, to prevent overtaxation of tangible property. In St. Paul it was shown that tax values were about 60% of normal selling prices.

In 1900, in Michigan a valuation of railroads was made for taxation purposes. Reliance was placed upon estimates of appraisers and real estate experts. To cover special value of railroad lands, an increment was added to the results secured by the experts. Practice of applying **multiples** to railroad property has since been followed frequently. In 1911, New Jersey made a valuation of railroads for tax purposes, reliance being placed largely upon assessed values of adjoining lands. An amount of 7% was added to represent administrative cost and interest, but in making its final estimate of right-of-way values, the state board doubled the values determined by the expert.

VALUATIONS FOR PURCHASE.—A utility property may be sold to a city or to another corporation. A valuation to determine purchase price may be necessary. Sometimes utilities operate under franchises providing for sale to the municipality at expiration of a given period and under terms requiring a valuation of plant. Sometimes the franchise is an item in a valuation and in such cases its cost only is an allowable item.

Commissions and courts have tried to evolve principles governing such valuations. Thus Wisconsin Railroad Commission usually includes value of pavement over mains, although excluding it for rate purposes. The Supreme Judicial Court of Maine, in a municipal purchase case, says that "a fair rate—usually the prevailing rate—of interest upon the money invested in the plant during construction, and before completion, is as much a part of the cost of construction as is the money itself which is expended for materials and labor."

Bases of Valuation of Utilities

Certain more or less well-defined bases of valuation for rate-making, taxation, purchase, and capitalization have been established. So far as they relate to the valuation of public utilities, they may be said to have been formulated to protect property under the federal constitution.

ACTUAL COST.—This will be considered as a basis of valuations for rate-making, capitalization, taxation, and purchase.

1. **Rate-making.**—The term may mean total cost to date regardless of whether all units purchased are in existence today, or it may mean merely original cost of existing units. Its use requires correct distinction between capital and income. If accounting records were kept without error, **book value** would indicate actual cost; but usually book value is not a dependable guide. Frequently the discrepancy between cost and value is so great that actual cost does not greatly influence valuations. Until recently, in public utility valuations, the tendency has been to include in **fair value** accretions arising from natural community growth, as well as those received in form of donations. **Land** gives rise to large discrepancies between cost and value where value means present market value or replacement value. In 1900, real estate of the Illinois Central, book value $200,000, was valued at $34,000,000. In 1894, the United States Supreme Court found actual cost greater than reproduction cost, but held that this "actual investment . . . . is not to be ignored, even though such sum is far in excess of the present value."[15] **Actual cost** was strongly upheld in *San Diego Water Co.* v. *City of San Diego*.[16] The Wisconsin Railroad Commission holds no single standard, but always considers actual cost data when available. In 1910 it said: "For rate-making purposes the actual total investment in the enterprise, subject to certain qualifications, seems to be the basis for determining the reasonableness of the charges that may be exacted of the public."

The New York law requires the commission, in fixing charges on gas and electricity, to "give due regard among other things, to a reasonable average return upon capital actually expended." The Interstate Commerce Commission, in *Advances in Rates* (western) *Case*, 1911,[17] said that the nearest approximation to a fair standard is "bona fida investment." The New Hampshire Public Service Commission says that "a rule equitable alike to investors and the public would seem to be that property dedicated to the public use shall neither increase nor decrease by reason of any change in its cost of reproduction, but shall continue to earn a full return upon the amount honestly invested therein." But in the *Minnesota Rate Cases*, Justice Hughes said:[18] "It is clear that in ascertaining the present value we are not limited to the consideration of the amount of the actual investment," and, "The property is held in private ownership and it is that property, and not the original cost of it."

Depreciation reserves are almost invariably set up on a cost basis. They represent withholding of replacement funds from income before they are required to make replacements. If these are invested in extensions and betterments, **Property account** is increased, also its earning capacity.

Federal courts have decided that where properties are unable to set up reserves to amortize cost of worn out equipment, they may retain it in "fair value" until increased earnings permit writing it off. The Interstate Commerce Commission has followed this practice. Practice of state commissions is

[15] 64 Fed. 165.
[16] 118 Cal. 556.
[17] 20 I. C. C. R. 307.
[18] 230 U. S. 352.

not uniform. The best reasoned decisions of state commissions permit inclusion of unearned depreciation in fair value. The Wisconsin Commission usually includes unearned depreciation and other losses in determining fair value, so long as result secured does not exceed cost of reproduction of property. Since so many companies have been unable to earn depreciation, this amounts to the adoption of a standard of valuation which does not deduct depreciation to determine fair value. Since **depreciated value** of well-financed utilities is from 75% to 85% of cost of reproduction, significance of above from point of view of constitutional prohibition of confiscation of property is evident.

2. Capitalization.—Massachusetts first undertook systematic control of security issues of public service corporations. In general it has followed the policy of permitting issuance of stock of public service corporations for cash only and not below par. In connection with security issues commissions frequently find it necessary to value existing properties. The logical procedure is to determine values for capitalization, then base rates on those values. In such a plan **depreciation** must be considered, both in the original valuation when values are fixed as a starting point for future operations and as a continuing circumstance after such valuation has been made. In case of long-established companies difficulties in way of making actual cost the basis for capitalization are same as those in the way of making it a basis for rates.

Approval of a security issue is not necessarily a guaranty of fair return.

In the *Metropolitan Reorganization Case*[19] the valuation was for capitalization purposes. Folly of retaining obsolete or obsolescent property at original cost was shown. Within 20 years many miles of track had fallen into disuse. Obsolescence was illustrated in the inefficient horse-car service. Failure to provide for future replacement of existing equipment necessitated the issue of new securities for purchase of electric equipment, thus resulting in overcapitalization. The commission held that securities for property now non-existent should be amortized.

3. Taxation.—Basis of valuation for tax purposes depends on tax laws. Usually actual cost is not the basis. Franchises are usually valued by the **net earnings rule.**

4. Purchase.—Usually actual cost is not the controlling factor in a valuation for public purchase. Depreciation is usually considered, but it is deducted from cost of reproduction, not from cost. Where franchise or going concern value is considered and is determined on basis of earnings, actual cost basis is necessarily abandoned.

REPRODUCTION COST.—This is cost of reproducing a property new on basis of current prices. It is usually customary to average prices over a period, say 5 years, preceding date of valuation. The plant is usually assumed to be reconstructed from materials and equipment in every respect the same as used in construction of the actual plant. But sometimes a substitute plant of equal capacity is assumed. Either present or original conditions may be assumed. Ordinarily it is fairest to assume reproduction under conditions actually existing at time plant was constructed. Reproduction cost may be either greater or less than actual cost, depending on price tendencies and skill used in erecting existing plant. Difficulties of applying the reproduction cost method have been expressed by the United States Supreme Court as follows:[20]

Moreover, it is manifest that an attempt to estimate what would be the actual cost of acquiring the right of way if the railroad were not there is to indulge in mere speculation. The railroad has long been established; to it have been linked the activities of

[19] P. S. C. R. (1st Dist. N. Y.), Case No. 1305.
[20] 184 Fed. 765.

agriculture, industry and trade. Communities have long been dependent upon its service, and their growth and development have been conditioned upon the facilities it has provided. The uses of property in the community which it serves are to a large degree determined by it. The values of property along its line largely depend upon its existence. It is an integral part of the commercial life. The assumption of its non-existence, and at the same time that the values that rest upon it remain unchanged, is impossible and cannot be entertained.

In many cases it is impossible to secure satisfactory estimates from experienced engineers. In many instances depreciated condition of properties makes it necessary, in arriving at present or fair value, to make deductions from reproduction cost for depreciation, so that reproduction cost less depreciation is a corollary proposition. Commissioner Thelen of the California Commission says: "Cost of reproduction of a property is to be considered merely because it serves as an indication of what has been invested in the property, and not what the property is worth, as worth is generally understood."

1. Rate-making.—The field is divided into two groups of advocates: (a) those who make reproduction cost the basis of valuation, and (b) those who make reproduction cost less depreciation the basis.

Reproduction cost less depreciation has been upheld by the following:

Oklahoma Supreme Court *In Re Pioneer Telephone & Telegraph Co.* v. *Westenhaver* (Jan. 10, 1911).

New York Public Service Commission, First District, *In Re Metropolitan Street Railway Reorganization* (Feb. 27, 1912).

The Supreme Court of the United States in *Knoxville* v. *Water Co.* (212 U. S. 1).

R. H. Whitten, in "Valuation of Public Service Corporations" (1912), Vol. I, p. 359.

Special Committee of American Society of Civil Engineers in tentative report, "Valuation for Purpose of Rate-Making."

The opposite side has been defended by A. C. Humphreys in "Proceedings of American Gas Institute," Vol. VIII, Part II, p. 521.

Reproduction cost taken in connection with depreciation has been the most important single factor in valuations for rates. Earlier tendency to make it outweigh all the other factors has been toned down. It was rejected by the United States Supreme Court in the *Missouri Rate Cases*, also by the California Commission as a means of throwing light on investment in property. In the *Chicago Gas Case* (1911),[21] cost of reproduction new was approved on the ground that the "company in this case has charged operating expenses annually with an amount which is deemed sufficient to offset the depreciation." It was approved by the Wisconsin Commission in *City of Whitewater* v. *Whitewater Electric Light Co.*[22] "since although the investment may apparently be diminished by failure to provide for depreciation and by the payment of this money to owners or stockholders, in reality the investment is not diminished, because of the necessity of replacing the plant, in the absence of a depreciation fund, from the property of owners or stockholders." In *Hill* v. *Antigo Water Co.*, the Commission stated that it might under certain conditions deduct depreciation from cost of reproduction, and explained that this might be done where a company has had rates ample to cover all operating expenses, including depreciation, and to afford also a fair amount for interest and profits but where the amount collected for depreciation has been distributed to stockholders.

The rule employed in the majority of rate cases has been reproduction cost

[21] R. H. Whitten, Valuation of Public Service Corporations, Vol. I, p. 365.
[22] 6 W. R. C. R. 132, 138 (Dec. 16, 1910).

less depreciation, but it has been simply a plan of procedure subject to constant modification and, sometimes, to rejection.

Since a deduction from cost of reproduction to cover depreciation is important, it is necessary to determine what such deduction shall cover. In tentative valuation of Texas Midland Railroad by Interstate Commerce Commission, cost of reproduction was found to be $3,627,313, and depreciation deduction $854,584, or 23.5% of reproduction cost. In tentative valuation of Atlanta, Birmingham & Atlantic Railroad, cost of reproduction was found to be $26,446,-411, and depreciation deduction $13,746,188, or nearly 52% of reproduction cost. In tentative valuation of Kansas City Southern figures were: reproduction cost $47,015,814, depreciation deducted $7,148,722, or slightly over 15% of reproduction cost. In one case the New Jersey Commission deducted 6.6% for physical depreciation only. In the Texas Midland valuation, the Interstate Commerce Commission allowed 50% of replacement cost for ties. No reduction was made for engineering and grading. For most items a normal service life was assumed and they were then depreciated on basis of expired life.

2. Capitalization.—Capitalization value is usually equivalent to cost; consequently cost of reproduction is not usually regarded as a proper base to determine capitalization value. Capitalization is an accounting problem and usually refers to cost. It is a measure of proprietorship, not of value.

3. Taxation.—In 1900-1901, Professor M. E. Cooley appraised the Michigan railroads for tax purposes. Reproduction cost less depreciation was used but overhead was not depreciated, except that allowance for contingencies was reduced about 18%. Ohio, Wisconsin, South Dakota, and New Jersey have made physical valuations of railroad property, present value being determined by deducting depreciation from cost of duplication. E. M. Bassett, ex-Commissioner of Public Service Commission of New Jersey, First District, says:

"If it is decided that a public utility should be taxed on its total value as a going concern—that is, its commercial, market or sale value—then franchise and going value will be included. If, on the other hand, the public utility plant is to be taxed precisely as other real estate, the cost of reproduction less depreciation will be the basis."

A study of assessed valuation, cost of reproduction new, and par values of stocks and bonds made of Wisconsin railroads showed that in some cases cost of reproduction new was two or more times as great as assessed valuation, as determined by estimate by the State Tax Commission. In other instances the Commission's estimate of value fell below cost of reproduction new.

4. Purchase.—The reproduction cost basis has been used in modified forms in valuations for public purchase. Valuation for public purchase is in many respects analogous to valuation for rates, being based on the same **constitutional principle,** viz., that private property should not be confiscated. Whereas in valuations for rates there are two primary factors, **value** and **rate,** in valuation for purchase there is but one, **value.** Certain items may be included in a purchase valuation which should be excluded in a rate valuation. The Wisconsin Commission usually includes value of pavement over mains in purchase valuations but excludes it in rate valuations. The Wisconsin Supreme Court says that in arriving at cost of reproduction for purposes of public purchase, such cost shall be considered as "would be necessarily incurred by a reasonably prudent and careful man, using ordinary careful business methods, in reproducing a plant of equal efficiency."

Interest during construction is usually included in both rate and purchase valuations In laying down rules for an appraisal for municipal purchase, the Supreme Judicial Court of Maine included "a fair rate—usually the prevailing

rate—of interest upon the money invested in the plant during construction, and before completion" as a part of cost.

In *National Telephone Co., Ltd.*, v. *His Majesty's Postmaster-General* (1913),[23] the basis was nearly equivalent to reproduction cost of physical property less depreciation. A **fundamental cost** was agreed upon which corresponded to cost of reproduction less depreciation, except that it included casualty insurance, an item of small importance in the aggregate.

In appraisal of Gloucester Water Supply Co. (1899-1901), cost of duplication less depreciation was basis of valuation, but an allowance was made for going concern of 13% of total.

MARKET VALUE.—Market value plays an important part in tax valuations. In rate valuations it is often rejected because market value depends on rates. Market value disregards money invested. It has been recognized as a factor in valuations by the United States Supreme Court. It has been made the basis of railroad valuation by the Washington Railroad Commission.

1. **Rate-making.**—Market value is sometimes an important factor in determining reproduction cost, because reproduction costs are usually assumed to be what market values of land and materials are at time cost of reproduction is determined, or what they average over a period of years. Sometimes market value is assumed to be increased by a **multiple** because of the additional value given to it by its newly assumed use. For detailed consideration, see *Minnesota Rate Case*, 256 U. S. 352; also Saliers' "Depreciation, Principles and Applications," pp. 396–398.

The St. Louis Public Service Commission appraises land at present market value but employs actual or original cost in valuing equipment.

The Interstate Commerce Commission ascertains present value of land by multiplying number of acres of land owned or used by carrier for purposes as a common carrier by **present market value** per acre of "similar, adjacent and adjoining lands," due allowance being made for "peculiar adaptability of the land to railroad use." It rejects use of **multiples** to find "railway value," following the lead of the Supreme Court in *Minnesota Rate Cases*.

The Washington and California Commissions, reversing earlier practice, have rejected use of multiples.

In **land values** depreciation is not ordinarily a matter to be considered. Appreciation is more important. In determining it, courts and commissions tend to reject use of multiples and, in some instances, cost of reproduction as determined by valuations of adjoining lands.

In finding market value of **wasting assets** the depreciation problem is a question of facts. If depreciation has been earned and the reserve is intact, it ought to be deducted to arrive at value for rate purposes. If it has been earned and distributed to stockholders, it ought to be deducted; but if, under good management, the utility company has been unable to earn depreciation, it ought not to be deducted in ascertaining fair value.

2. **Capitalization.**—Capitalization is an accounting problem. Accounting proceeds from a cost basis. But there are departures from this general rule. Sometimes cost cannot be determined. Sometimes it is so far out of consonance with existing conditions that to adopt it is unjust.

The New Hampshire Commission says that the price obtained at a sale helps to determine fair present value for capitalization purposes.

The Michigan Commission holds that fair market value as represented by

[23] R. H. Whitten, Valuation of Public Service Corporations, Vol. II, pp. 1039–42.

initial cost plus certain developmental expenses is the proper basis of capitalization. In one case this was:

Original land cost	$ 500,000
Service in acquiring	500,000
Interest during purchase	150,000
Cost of promotion	300,000
Total	$1,450,000

In 1894 Texas made an appraisal to regulate security issues. Right of way and real estate were valued on basis of current market value of immediately adjoining territory.

When market value is made the basis of capitalization, the depreciation reserve, if earned, should be deducted from total market value. If, under good management, it has not been earned, it should not be deducted. If it has been earned but distributed, it should be deducted.

Where market value is determined, not on basis of earning power but on basis of cost, and allowance is made for depreciation, the reserve should not be deducted.

3. Taxation.—Market value has been an important factor in valuations for tax purposes. In Michigan an appraisal was made for tax purposes in 1900. **Multiples** were employed for the first time, being applied to values ascertained by experts. Percentage added varied from 100% to 300%, with an additional fixed charge of $3 to $8 per acre to cover costs of acquisition, etc. Results being unsatisfactory, another valuation was made in 1902. To determine actual costs of buying land, county records were studied and abstracts made of all transfers over a preceding period of 10 years, and average price paid per acre for various classes of land was computed. This was compared with transfers of improved and unimproved lands adjacent to railroads. The results showed that the earlier valuation undervalued real estate owned by railroads.

In 1903 the Wisconsin Commission made an appraisal for tax purposes. As added precaution the Commission applied to average transfer price per acre a percentage representing ratio of average assumed value of land in a given locality to average price paid for that land.

In Wisconsin railroads must pay true average rate of taxation on market value of property.[24] This is interpreted as being the amount that could be realized from sale of that property under normal conditions.

In 1911 New Jersey appraised railroads for tax purposes, placing reliance chiefly on market values of adjoining lands. An amount of 7% was added for incidental costs.

Sometimes market value is secured by capitalization of net earnings. In tax valuations it is more usual to base value on comparisons of sales of property located similarly to that being valued. Where **net earnings** method is followed, current depreciation is a factor because its deduction is necessary to a correct statement of profits.

4. Purchase.—Market value is not usually the chief factor in public purchase appraisals. To accept it as the basis would be to capitalize present earning capacity, which is based on rates, and may represent too great or too small a return on a fair valuation.

DEPRECIATION RESERVES IN VALUATIONS.—Most utility companies have not established depreciation reserves, going on the theory that repairs are equivalent to depreciation, or have set up inadequate reserves. A company

[24] Wisconsin Statutes, 1915, Ch. 51, 14.

should receive a fair return, not on depreciated value of original plant, but on its cost plus or minus any amount which various considerations may make equitable. A return ought not to be earned on the reserve because it offsets accrued depreciation which is not deducted in the balance sheet. The amount reserved is the property of the company returned through the rates to offset accrued depreciation on plant but which has not been deducted from cost. If accrued depreciation were deducted from plant in determining fair value, then, on the contrary, extensions financed out of depreciation reserves ought to be included in fair value.

Corollary considerations:

1. When revenues have been insufficient to afford a fair return and also establish depreciation reserves, so that no reserve has set up.
2. When revenues have been sufficient to afford a fair return and also establish depreciation reserves, but no reserve has been set up.
3. When the reserve is employed to amortize capital.

If, in (1), accrued but unearned depreciation is deducted in determining fair value, investment is depleted, because no offset to accrued depreciation exists in form of extensions, betterments, or investments, paid out of the reserve. The company has consumed capital to pay running expenses and no allowance is made for this in fixing fair value. If the depletion in capital results from mismanagement, the loss should not be capitalized; otherwise it should be included in fair value.

When, as in (2), depreciation has been earned but distributed, it should be deducted from cost in determining fair value. Not to deduct it is to permit the company to capitalize that which it has returned to its stockholders.

When, according to (3), the reserve is employed to amortize capital, depreciation should be deducted to determine fair value. The legitimate use of the reserve is to offset accrued depreciation. If used to amortize capital, equity of owners is reduced to that extent. They cannot expect to secure a return on what they originally invested, for allowance should be made for what has been returned to them.

Valuation of Commercial Plant

COST THE USUAL BASIS.—In most commercial balance sheets, values are shown as cost or as adjusted cost. The **primary evidence** of cost is the **purchase invoice,** but it is usually necessary to consider less definitely ascertainable elements also. Proper segregation of capital and revenue is a factor.

CAPITAL AND REVENUE.—Capital expenditures are those which should result in the increase of asset accounts, although they may result indirectly in the decrease of a liability. Revenue expenditures are those which should result in charges to expense accounts.

Capital receipts are funds received from sale of capital stock or fixed assets.

Capital expenses are those incurred in providing capital needs.

ORGANIZATION EXPENSES.—These are a group of capital expenditures incurred to place a concern on a going basis. As soon as enough revenue is accumulated to write them off, they should be considered as revenue expenditures. They constitute capital expenditures at time of incurrence because no other than capital funds are available.

MAINTENANCE.—After a concern begins to produce revenue, it is necessary to distinguish capital from revenue. The chief difficulty arises in connection

with repairs, renewals, replacements, and betterments. The dividing line between capital and revenue expenditures must sometimes be closely drawn. More or less arbitrary working rules are sometimes followed.

A. L. Dickinson defines repairs and renewals as follows:

Repairs.—This should include all current expenditures recurring from day to day and from month to month on the general upkeep of the existing property without the renewal of any substantial part thereof, and generally all periodic repairs which are necessarily undertaken within, say, one year.

(This caption will, of course, include certain renewals of small parts, etc., such as would be necessary to continue the useful life of any unit of building, plant, or machinery over the estimated period of its life.)

Renewals.—This should include all expenditures incurred in renewing, in whole or in part, any unit of building, plant, or machinery, which tends to extend its useful life beyond the average term. These expenditures would in general be those which would only occur at long intervals of two or three years, and whose effect would last for a number of years afterwards.

Replacement has been defined as "the act of replacing a plant unit which is going out of service, with a **substitute** which may be either identical with the unit replaced or different from it."

TREATMENT OF RENEWALS.—Adequate maintenance requires constant repairs and replacements. When a new part is substituted for an old one, the question of **betterment** arises. If the new costs more than book value of the old, a betterment results measured by the excess. **Renewal of machine parts** presents a more difficult question because the original cost of parts must be estimated, neither is its depreciated value exactly known. Certain **working rules** should be adopted. Kester suggests that only when renewal involves an expenditure of $5 or more should an attempt be made to determine the amount of betterment, every expenditure under $5 to be charged to expense. The Chicago Traction System makes $200 the minimum charge to capital or renewals, all lesser charges being made to income even though in reality capital expenditures.

Cost-cutting changes should be charged to capital or revenue, accordingly as they do or do not increase earning capacity. When such costs are capitalized they should be rapidly depreciated. The **best practice** is to handle items of this kind as **deferred charges** under suitable descriptive caption, instead of as charges to the asset account, where their nature is soon lost from view and the need of a high depreciation rate forgotten.

All assets subject to depreciation are in the nature of a deferred charge. "To meet this condition," says I. S. Eaton, "we arbitrarily designate certain expenditures whose effect infinitely outlasts the immediate earning period as 'capital,' and then in the same arbitrary way, through all subsequent vicissitudes, we hold them to their first value by maintenance, renewal, and depreciation charges which are borne by other expenses."

Separation of expenditures or basis of capital and revenue should be properly authorized, the authority taking the form of a **journal voucher.**

Construction costs sometimes properly involve capitalization of repairs, because all costs necessary to bring a plant to operating condition represent capital expenditure. Among these are: interest on borrowed money, engineering, supervision, legal expenses, taxes, and overhead.

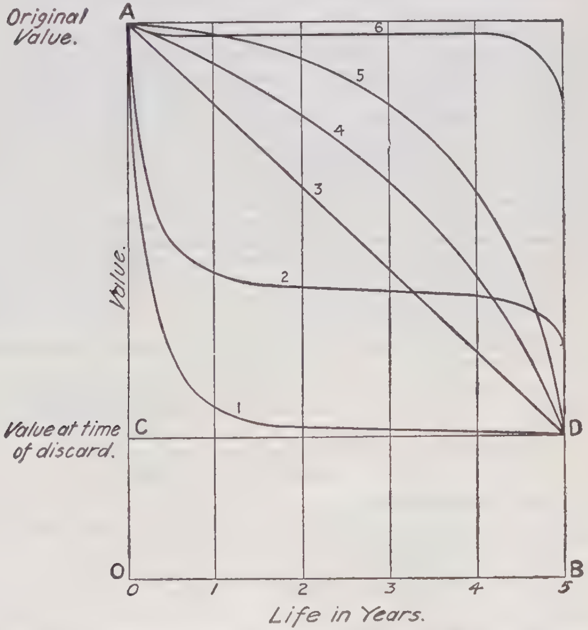
The correct application of the above principles leads to the exclusion from the asset side of the balance sheet of items which cannot be properly capitalized.

GROUPING OF ASSETS FOR VALUATION PURPOSES.—For this purpose Kester lists assets as current, deferred charges to operation, and fixed, and says, in effect:

1. **Current assets** should be valued on basis of cost or market, whichever is lower. Speedy realization of current assets by conversion into cash is the aim; cost, if lower than market, should be the valuation base.

2. In case of **deferred charges to operation**, the principle is simply the equitable proration between periods on going concern basis.

3. **Fixed assets** should ordinarily be valued on basis of cost less depreciation. Market values have no effect, because to a going concern they are worth cost less proportion thereof used up.



FORM 1. Chart Showing Actual and Theoretical Depreciation

Valuation is not an **exact science**, consequently balance sheets are to a certain extent **expressions of opinion.** In balance sheets, content is more important than form. Consequently the need of using care in applying valuation principles is great.

PROBLEM OF DEPRECIATION IN VALUATION.—The depreciation problem arises in connection with valuations through the necessity of distinguishing capital and revenue. The correctness of both income statement and balance sheet are involved. It is necessary to distinguish between depreciation principles as applied to conservation of investment and as applied to determining valuation for current purposes. Preservation of investment is secured, for practical purposes, if original cost of an asset is returned through revenues during its life, but since various schemes of charging off depreciation

require its writing off at different rates at given periods in the life of an asset, the amount reserved at a given time depends upon the method employed to ascertain the charge. In any case, the amount established by an arbitrary method is **theoretical depreciation,** whereas **actual depreciation** is that established by actual examination and consideration of all factors which have a bearing on value when considered as a question of practical expediency. Theoretical depreciation is related to the problem of financing, whereas actual depreciation is related to present usefulness. Form 1, adapted from Floy's "Value for Rate-making," illustrates possible difference between actual and theoretical depreciation.

Curves 1, 2, and 6 represent actual depreciation, 1 and 2 as viewed from standpoint of salability, and 6 as viewed from standpoint of serviceability, assuming that maintenance keeps the asset at nearly 100% efficiency during most of its lifetime. Curves 3, 4, and 5 represent theoretical depreciation, each curve illustrating a different base or method of writing down. Floy says:

The curves 3, 4, and 5 indicate several classes of "theoretical" depreciation which have been quite widely used in some cases for estimating present values, but more often for determining the yearly theoretical deterioration for purposes of establishing depreciation funds, which, however, is quite a different subject. Making a theoretical estimate of the probable future, average, annually accruing deterioration of certain property to provide an item in bookkeeping accounts of operating expense has nothing whatever to do, in making an appraisal, with fixing the definite amount of absolute, actual, or accrued depreciation which depends upon the present condition of physical property, determinable from inspection and not upon historical documents, depreciation funds, or disputed theoretical conclusions.

Sometimes the distinction is brought out by the expressions **accounting depreciation** and **fair depreciation.** Accounting depreciation refers to book depreciation and is practically equivalent to theoretical depreciation. Its chief object is to provide an adequate financial policy regarding replacements and capital preservation. Fair depreciation is the depreciation of valuations—the amount to be deducted to ascertain **fair value.** This is chiefly an engineering problem in solving which the following should be considered:

1. Accounting depreciation.
2. Managerial policy regarding repairs, maintenance, and renewals.
3. Past and expected future performance of the asset.
4. Current operating expenses.
5. Monopoly of business possessed by company.
6. Going concern value.
7. Earnings of past periods.
8. Fitness of plant to meet present and future requirements.
9. Present efficiency of plant.
10. Length of time required to construct the plant *de novo.*
11. Appreciation due to natural causes.
12. Present and probably future earnings.
13. Franchises and other privileges owned.
14. Replacement cost.
15. Quality of service rendered.
16. Good-will.

CASH.—Cash includes money and whatever serves as money, as, legal tender, bank notes, checks, bankers' drafts, postal and express money orders, and, sometimes, postage stamps and I O U's. In the balance sheet, under current asset "cash" should appear only items really current. If the **imprest** system is in use the petty cash fund should be replenished before the books are closed.

Bank account and cash book should be reconciled and the amount should agree with cash in the balance sheet. All properly authorized **claims against cash** in bank should be treated as cash disbursed if regularly issued, whether or not presented for redemption at bank. **Checks** written but not mailed are not usually regarded as disbursements. **Items** left at bank for **collection and deposit** may be regarded as cash on hand. **Dishonored items,** if in large amounts, should be included among receivables. The occasional practice of including in cash **items collected after date of balance sheet** should not be tolerated.

If a concern receives payment for commodities in postage stamps and uses these in its own correspondence, such stamps on hand at end of an accounting period should be included in inventory of office supplies. Transfer from cash to supplies can be accomplished in either of two ways without interfering with the checking of cash against bank records. The **usual plan** is to record receipt of stamps in the cash book, then transfer them to the stamp drawer for office use. Since all other cash items are deposited, cash receipts do not agree with deposits, as per bank. To secure agreement make out a check payable to "Cash" or "Postage" and pass it through bank periodically as a deposit. The check appears in the cash book as a cash disbursement and makes a proper charge to the proper expense account—Postage, or Supplies. It also causes the concern's records to agree with those of the bank. **Another plan** is to employ a **postage journal** to record receipts and disbursements of postage.

Adequate cash control necessitates depositing all cash receipts and making all cash payments by check and the imprest system.

For managerial purposes it is necessary to separate cash into:

1. In safe or drawer.
2. In various working funds.
3. In petty cash fund.
4. In bank:
    (a) On current account.
    (b) Restricted.

The amount in bank on current account may be further subdivided into that to be used for immediate checking purposes and that upon which interest is earned. Amounts subject to interest are available on short notice, usually with sacrifice of interest earnings to date.

Cash held in foreign branches, if exchange rates vary little, may be incorporated in head office results at an arbitrary conversion figure, and substantially correct results will be secured. The most accurate results are secured by employing the rate of exchange prevailing at time of closing books. This should be used when exchange is not fairly stable. Sometimes it is advisable to set up a **Reserve for Fluctuations in Exchange,** to absorb too great a charge or credit to current Profit and Loss in case a very favorable or a very unfavorable rate prevails at date of conversion.

ACCOUNTS RECEIVABLE.—In the balance sheet only current items should be included under this title. Sometimes other receivables than those owing from trade creditors are included under this title, as accrued income from rents, etc., earned but not due; also:[25]

1. Cash deposited to cover breakage or damage to equipment in use, to guarantee the payment of prospective expense, or to guarantee good faith in performance of contract.

[25] R. B. Kester, Accounting, Theory and Practice, Vol. II, pp. 215–216.

2. Moneys advanced to subsidiaries, salesmen, and other employees on account of expenses and salaries.
3. Claims against creditors for returned or damaged goods, against railroads for lost or damaged goods, and against governments for rebates, drawbacks, and the like.
4. Prepayments on purchase or expense contracts, as payments made to bind a bargain or before delivery of goods; and expenses paid in advance, such as royalties, rents, interest, etc.
5. Unpaid calls or instalments on stock subscription contracts.
6. Claims against absconding officers for property appropriated or trusts violated.

A more definite term is "trade debtors." By using it the uncertainty attaching to more general expressions is avoided.

Estimating bad debts is the chief problem in the valuation of accounts receivable. A reasonable allowance for bad debts is recognized as a legitimate business expense. What is a reasonable allowance depends on circumstances. Such an estimate is necessary to charge the current period with its fair proportion of expense. If it is not made, the loss is not deducted until the individual accounts in question are proved bad. The amount of bad debts losses depends largely on the concern's credit policy, losses usually being large where the sales force is granted liberal credit-giving powers. An efficient **credit department** can do much to reduce such losses.

Percentage of loss varies for different lines of business and for different concerns in the same line. Each line has its **normal credit period** and the length of this has some effect on losses.

Experience within the business must be the guide in estimating bad debts losses. The accounts should be analyzed as to length of time they are past due, as, those overdue not over 30 days, less than 60 and more than 30, less than 90 and more than 60, those 90 days to 6 months overdue, those 6 months to one year overdue, and those more than a year overdue. Subtracting total overdue from total accounts receivable gives amount not overdue. This analysis, although not always necessary, is of value:

1. When, as in case of a new concern, there is no past experience upon which to base an estimate.
2. When an outside professional auditor is required to make the estimate.
3. When, periodically, it is desired to check up the work of the credit department.

Three bases of estimating bad debts, in each of which the amount is expressed as a percentage, are:

1. Amount of outstanding trade debts at date of balance sheet.
2. Amount of sales on credit made during present fiscal period.
3. Total sales for period.

Use of **trade debts** as a base is based on correct principles when the balance sheet is made up at the same date each year so that conditions as to periodicity of sales are the same year after year. If it is necessary to make the estimate more frequently than once a year, this situation does not hold because sales and collections vary with seasons. In this case one of other methods should be used.

Total sales, gross or net, serves as a good basis so long as the ratio of cash to credit sales remains fairly constant. If this ratio does not remain fairly constant, **credit sales** should be made the basis, or the changing ratio should be taken into consideration when making the estimate.

Collection costs take the form of discounts granted to encourage prompt payment and other expenses of collections. The weight of authority favors treating these as financial management items and consequently bearing no direct relation to sales. Some, however, regard them as deductions from sales revenue and make provision for them when valuing trade debtors. This is accomplished by estimating cost of collecting outstanding debts and also loss from discounts taken by customers and deducting a reserve therefor in the balance sheet.

In case of **receivables other than trade debts,** the same principles apply, in general, as in case of trade debts receivable. Some of these items are not current, as in case of the remote instalments where sales are made on the **instalment basis.** Suitable reserves should be set up and shown as deductions from the face amount on the balance sheet.

NOTES RECEIVABLE.—Notes are more formal than open accounts receivable, and in case the maker defaults, the loss of credit suffered is correspondingly greater. In general, however, notes are not more collectible than open accounts. Sometimes they are taken in settlement of slow accounts, and sometimes they are permitted to become past due without great effort being made at collection. Where not paid when due, new notes should ordinarily be demanded in their place.

Interest must be considered in valuing notes receivable. Most trade notes do not bear interest, so that they are not worth face value until due. If such non-interest bearing notes are of considerable amount, they should be shown at discounted value in the balance sheet. Interest-bearing notes are worth their face value.

"Notes receivable" should include only notes received from trade creditors. All others, such as those received from officers, should be placed in a special account. In general, such notes are not regarded favorably because there is no normal process of liquidation for them.

MERCHANDISE INVENTORIES.—This subject is treated in section on "Inventories." Merchandise inventories comprise all assets purchased for purpose of resale in the same or modified form. In case of manufacturers the division is threefold—raw material, goods in process, finished goods. Realizable value may be more or less than cost. This **realizable value** must be differentiated from **retail selling value,** because to value inventories on the latter basis would be to anticipate profits. The general rule of inventory valuation is cost or market, whichever is lower, and the prices used should be purchase or wholesale market. Since balance sheets are used as a basis for credit-granting, insufficient credit may be secured when inventories are stated at cost, whereas market prices have risen rapidly since date of acquisition. Under these circumstances a footnote in the balance sheet may be used to set forth current market value. Kester says:[26]

"The valuation formula of cost or market, whichever is the lower, while based on conservatism, may unnecessarily and improperly burden the current income account. Valuation at cost, on the other hand, while placing the profit or the loss in the period when realized, may cause the balance sheet to present an entirely inadequate and even misleading story as the basis for credit. To remedy this, three courses are open, viz.:

1. Carry the market valuation, whether more or less than cost, in a footnote to the balance sheet.

[26] Accounting, Theory and Practice, Vol. II, pp. 228–229.

2. In case market value is less than cost, set up a reserve out of profits equal in amount to the difference.
3. Carry in an inner column in the body of the balance sheet the present market value."

Depreciation of inventories results from changes in styles, overstocking, shelf wear, display, broken lots, etc. Where such depreciation exists, valuation at cost results in inflation. The proper basis of valuation is what goods of similar kind and quality could be bought for. This properly brings the deterioration in as a loss for the current period.

Cost of goods includes not merely invoice price, but any additional costs incurred in preparing the goods for sale, such as freight, drayage, warehousing costs, seasoning, etc. The method of distributing these additional costs over goods is a matter of policy to be determined by circumstances. Usually a percentage sufficient to cover all these items is spread evenly over all units comprising inventory. Where stock is of few types or varieties, a more accurate proration may be attempted, but this is not usually necessary.

Inventory-pricing usually requires the adoption of certain more or less arbitrary rules. One such rule is that the purchase price as per last invoice of an article shall be used as the inventory price. Difficulty arises if several purchases of a given article have been made during the past period, for then the last price governs under this rule. It may then be policy to use an **average price.** Kester says:

> The **weighted average,** whereby each purchase price is weighted with the volume or quantities purchased, is fairer, though more complicated than the straight average. Thus 10 units bought at $100 per unit, 15 at $90, and 3 at $110, would give a straight average of $100 but a weighted average of $95.71, $(1,000 + 1,350 + 330) \div (10 + 15 + 3)$. In manufacturing establishments where the fiscal period is short, say one month, and it is desirable to keep the raw material cost as nearly uniform as possible, the method of the weighted average is to be recommended.

INVENTORIES OF MANUFACTURERS.—Valuation at cost applies to **finished goods.** Under a detailed cost system this figure is the goal of the records. Where no such system is operated, the valuation is an estimate. **Raw materials** should be valued on same basis as goods bought for resale. **Goods in process** are of two classes, viz., (1) those manufactured for **stock,** and (2) those manufactured on **special order.** The first should be valued on a strictly cost basis, the problem being to determine what elements of cost have been absorbed therein to date. This can be done accurately only if a detailed cost system is operated. Goods manufactured under contract or special order may be valued somewhat differently. The sale has already occurred. A careful estimate should be made of cost to date. The estimated profit applicable to this may be taken into the current period. Periodic payments on such contracts usually make this plan practicable from the point of view of dividend requirements.

TEMPORARY INVESTMENTS.—These tie up funds only temporarily, whereas investments made to secure control of other companies or privileges necessary to the most efficient operation of business are **permanent** investments. A. L. Dickinson says that temporary investments "have no relation whatever to the business and can be disposed of without in any way interfering with its earning capacity, other than the loss of the dividends thereon." There are certain seasons when funds lie unemployed and it is desirable that these otherwise idle funds be invested temporarily. **Short-time notes** usually provide safety and freedom from fluctuations, whereas investments in stocks are more hazardous but at the same time may be the source of speculative profits.

Cost or market, whichever is lower, is the usual rule for valuing temporary

investments. If it is not desired to state this item at other than cost in the accounts, a footnote may be used in the balance sheet to express market value as of date of balance sheet. Another plan is to employ a "Reserve for Investment Fluctuations." Thus if at close of a fiscal period market is lower than cost, Surplus should be charged and the reserve credited for the difference. On the balance sheet this reserve should be regarded as offsetting the Investment account, the latter being stated at cost. By making the charge to Surplus, current Profit and Loss remains unaffected by investment fluctuations. If market value is greater than cost, charge the difference to the Investment account and credit the reserve. When the securities comprising the temporary investment account are sold, reverse the entry by which the reserve was created, so that the difference between cost and selling price will be shown as actual profit or loss. Surplus is affected only temporarily.

Stock rights sometimes apply to investments held temporarily. Should the balance sheet date fall between the time of their issuance and that of their disappearance, it may be desirable to book stock and rights separately. For method of valuing stock rights, see Index.

Investments carried on margin should be charged to Investment account and a liability account should be credited to show the amount loaned by the broker. It is customary to charge the interest on loans from the broker to the Investment account, and to credit this account with interest and dividends received. The equity is found by deducting the amount owed the broker from the asset account. The Investment account is credited when the securities are sold, the balance showing net profit or loss on the entire transaction. Sometimes, however, it is desirable to keep in separate accounts charges and credits occurring after the original purchase is made, in order to secure separate accounting for income and expense.

Amortization of bonds purchased at a premium or discount and held for temporary investment purposes is not customary.

Brokerage firms hold stocks and bonds as stock-in-trade and the same general principles of valuation should apply as with merchandise.

Unissued stock is sometimes included among temporary investments, there being a correspondingly equal inflation of capital stock. Such unissued stock is not a real asset. Preferably, it should be eliminated by being deducted from amount of stock authorized on the balance sheet.

Treasury stock is sometimes treated as a temporary investment. Preferably it should be treated as an offset to capital stock. If treasury stock is acquired by open market purchase, it should be valued at cost, and, in the balance sheet, preferably be shown as a deduction from capital stock.

ACCRUED ASSETS.—At any balance sheet date many items of income earned during preceding period have not yet been received in cash. These accrued assets are in form of accounts receivable, interest, rentals, royalties, dividends declared but not paid, etc. The inadequacy of a **cash basis** of accounting is now generally recognized, because the period in which cash is received is not necessarily the one which should receive credit for it. Accounting on an **accrual basis** requires that earnings of a given period be shown as such, even though not realized in cash in a later period. This requires setting up as assets in the balance sheet items of income accrued but not yet received. The setting up of such accrued items does not mean that they are legally collectible as at date of the balance sheet, but that they represent items of value which will in future become legally collectible.

These accrued items are usually **current assets** because the terms of settlement require liquidation within a comparatively short period. Many of these

tems represent income referable to particular assets, as, interest on notes, dividends on stocks, rentals on real estate, etc. Sometimes the policy is pursued of adding the accruals to the particular assets to which they are thus related, but it is usually preferable to show them separately.

In the **valuation of accruing items,** they should be prorated between the two periods on basis of time. The amount applicable to the period preceding the date of the balance sheet is the amount to be entered therein as an asset, but not necessarily at its face value. This should be discounted if there is doubt as to the collectibility of the entire amount when it falls due.

For discussion elsewhere of **accounting procedure** for accruals, see Index. The following illustration is adapted from Kester's "Accounting, Theory and Practice":[27]

At time of adjusting and before closing books, for every item of accrued income a separate asset account is set up. Thus, for royalties an account, Accrued Royalties Receivable, records the claim on account of royalties at same time the accrued income from royalties is being recorded in a suitable income account.

From this point **two methods** are in use to handle subsequent recording of the item. Under the **first method,** income when actually received or legally due is recorded in the regular income account. This shows an inflated figure because not offset by the portion credited to the previous period, the asset account covering this remaining unchanged throughout the current period. At its close, proper adjustment is made by adding to, or subtracting from, the amount held over from the close of the previous period, such an amount as will make its new balance show the correct amount of accrued income as at the close of the current period. The contra credit or debit to the above entry is, of course, to the particular income account, causing it to reflect true income for the current period.

Under the **second method,** the first entries for the new year consist in transferring all accrued income asset balances to their respective income accounts, where they automatically adjust the full receipt of income, a portion of which was credited in the previous period, to the amount properly belonging to the current period. At close of period, any adjustment on account of accrued income is handled by debiting the asset account and crediting the income account as before.

PREPAID ASSETS.—These are sometimes known as **deferred charges to operations.** They are usually given a separate balance sheet caption although analogous in some respects to current assets. They differ, however, in that they are not to be turned into cash shortly, but are to be used to save expenditures during the next period. When a subdivision known as "working assets" is shown, these may be included therein. Items listed as prepaid assets are: postage, stationery, printing, unexpired insurance, advertising and rent paid in advance, and, sometimes, organization expense. Valuation of all prepaid assets should be made on a **going concern basis,** the amount as at any given date being determined by a pro rata distribution of values based on life of the supply and part unused. Sometimes this class of items is roughly estimated and frequently overvalued. The only remedy for this is a periodic clean-up and consequent elimination of obsolete or unusable supplies.

LEASING ON ROYALTY BASIS.—The following is quoted from Kester's "Accounting, Theory and Practice":[28]

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[27] Vol. II, pp. 251–253.
[28] Vol. II, pp. 255–256.

In some mining industries, notably coal and precious metals, leasing is done on a royalty basis with a minimum amount to be paid each period based on a minimum production of ore to be mined. If less than the minimum is mined, a frequent provision in the terms of the lease makes possible the application of any royalties overpaid one period against a future production of more than the required minimum. That is, no increased royalties are charged for a production over the minimum until all accumulated royalties from periods of underproduction are used up. In any period of underproduction, such royalties may properly be treated as **deferred charges** only on condition that there is reasonable expectation that future production will increase to the point where it will consume the overpaid royalties of earlier periods. At times a company finds itself bound to such a contract, based on a minimum production, without any hope of relief because the prospect has not developed as anticipated. Under such conditions the entire periodical royalty charge is a charge against operation and must be absorbed entirely by the operations of each fiscal period.

PERMANENT INVESTMENTS.—Permanent investments are those which are insome way useful in the continued operation of a business. If disposition of investments in no way affects its efficiency or its privileges and obligations, the investments are temporary; otherwise they are permanent. Mere ease of conversion into cash is not a test.

Permanent investments made to aid operations usually consist in the ownership of stock of other corporations. Sometimes the owning company is merely a holding company, sometimes it also engages in operations. Sometimes permanent investments take the form of **advances** to other concerns, sometimes of an interest, active or silent, in a partnership. The **evidence** may be either **formal securities** or **open book accounts.** Sometimes the chief purpose is to secure control of a series of successive operations or stages in productive processes; sometimes it is to secure control of conpeting enterprises of the same type. Such control is secured by **full ownership** of the subsidiary or competing enterprise, by a **controlling interest,** through interlocking directorates, through large advances made to assist the company controlled, etc.

In case of a **holding company** and subsidiary enterprises, it is now customary to set up a **consolidated balance sheet** which shows the true status better than a balance sheet of the controlling company which merely lists investments in subsidiaries. (See section on "Consolidations.")

Valuation of Permanent Investments.—Since this form of investment is a fixed asset, market fluctuations should be ignored. **Cost** is the controlling factor, but there may be reason to modify it because of the fact that stock of another company owned changes in intrinsic value with the changing fortunes of the issuing company. In this way securities differ from physical assets. It is necessary to make a valuation of the subsidiary concern to secure an approximately accurate valuation of its stock. If **advances** are made to a controlled enterprise, these must be valued separately from stocks of subsidiary owned. If a consolidated balance sheet is set up, these intercompany items are eliminated. Advances may be temporary or permanent and their exact status is sometimes difficult to establish; consequently, care should be used to see that they represent real asset value, not mere losses resulting from the loaning of funds to unprofitable subsidiaries. Each case must be settled on its merits after investigation. **Temporary loans** which have every prospect of repayment should be listed at face value. If repayment is to be made in securities of the subsidiary and it is prosperous, the advance should be carried at par as a fixed asset. If the securities have been received, they should be valued as any other permanent investment. If there is no prospect of repayment of advances, they should be regarded as expenses.

If the investment does not give control to the concern making it, they

should ordinarily be carried at cost, although it is sometimes desirable to show their market value in a footnote.

INVESTMENTS IN BONDS.—Bonds are usually bought at a premium or discount which necessitates the application of the principles of amortization. (See section on "Mathematics.")

Recording Bond Investments.—The following is adapted from Kester's "Accounting, Theory and Practice":[29]

When bonds are purchased, the record may be made in two ways. Accounts may be kept with the bonds at par, separate valuation accounts being carried for the discount or premium. An account with Bond Interest is also opened and sometimes one with Prepaid Interest on Bonds, where, as is usually the case, the bonds are bought with accrued interest to date of purchase. The accrued interest, however, is more conveniently recorded as a charge in the Bond Interest account, thus automatically adjusting the income from the bonds when the first coupon after date of purchase is redeemed. The **second method** is to record purchases at cost in the Bonds account, carrying there full information as to premium or discount, no separate accounts with these being opened. When bond interest falls due, the Bonds account itself is written up or down for the amount of the discount or premium accrued during the current period. The contra entry is in the Bond Interest account just as above. This method is not to be recommended when the only record kept of bonds is that mentioned above. If the investments are so numerous as to require a subsidiary ledger for their record, where with each kind of bond, accounts would be kept with its par, discount or premium, and interest, there is no objection to handling the controlling account on the general ledger by making the discount or premium adjustment directly to the Bonds account. Fuller information is given and the record is less involved, however, when handled by the first method.

For **formulas** for determining present worth at compound interest of sums of money due at given future dates, for finding amounts and present worths of annuities, and for finding valuation of bonds, see section on "Mathematics."

SINKING FUNDS.—If the securities in the fund are the **company's own bonds,** they should ordinarily be valued at cost, the discount or premium being amortized over their remaining life. If the bonds are purchased and canceled, they should be deducted from bonds outstanding. If not canceled, they should be held as assets.

If **securities of other companies** are bought for sinking fund purposes, they should be valued as long-term investments, premium or discount being amortized on a scientific basis. The credit of the issuing company should be considered, and if liquidation in full at maturity is doubtful, reserves should be established to offset the expected shrinkage.

EQUIPMENT.—Here are considered machinery, tools, furniture and fixtures, and other forms of equipment. Status of the enterprise as a going concern is important because items bring a small percentage of going concern value if subjected to forced sale. Market value is not a factor. The **basis of valuation** should be cost less depreciation.

The **legal distinction** between most items of equipment and land and buildings is that the former is **personal property,** whereas the latter is **real property.** Sometimes this distinction is important, as when it is desired to ascertain what items are included as security for a bond issue secured by a real estate mortgage.

Machinery and tools comprise a broad class of assets. The method of valuation depends upon the accounting records kept. The principle to be fol-

[29] Vol. II, pp. 267–268.

lowed is cost less depreciation. Since different kinds of machinery depreciate with varying degrees of rapidity, it is desirable for accounting purposes that these assets be classified with these differences in mind. It is especially important that in the accounting records machines and tools be distinguished, because of the more fixed nature of the former. **Machine tools** should be distinguished from **hand tools.** The former should be regarded as part of the machine even though replaced more frequently than the machine. Where the amount of machinery is large, a **machinery ledger** should be kept. This corresponds to the **plant ledger** described in section on "Depreciation."

Cost of machinery includes invoice cost, freight, insurance during transit, drayage, and installation. **Cost of power attachments** are usually regarded as a **power equipment cost.**

Periodic revision of depreciation rates on machinery are desirable, the frequency of such revisions depending on nature of the machinery and the amount of experience data available when the original estimate is made. In some instances enough experience data is available to permit the construction of **curves** showing life expectancy. See discussion in Saliers' "Depreciation, Principles and Applications," pp. 427–432.

Overtime is a factor to be considered in the valuation of machinery. See section on "Depreciation."

Tools are frequently carried in a Materials and Supplies account and, when issued, are charged as expense. Another plan is to charge all tools purchased for two or three years to an asset account, thereafter to expense, a revision being made periodically. Usually **loss** of tools is a considerable item and must not be neglected in any comprehensive investigation.

In case of tools and machinery made in the factory in which used, the **basis of valuation** is cost of manufacture less depreciation.

Cost of rearranging machinery if it increases earning power or prevents it from being diminished may properly be capitalized, but it is best to keep a separate account for such items. Frequently it is safe to write such costs off over a comparatively short period.

Furniture and fixtures should be valued on a cost less depreciation basis. Scrap or salvage value is usually negligible. In some cases the **inventory method** of valuation is preferable to the **appraisal method,** based on cost less depreciation.

Delivery equipment should be valued on a cost less depreciation basis, unless the circumstances make the **inventory method** preferable. **Horses** depreciate rapidly, but at rates which vary greatly under varying conditions. Sometimes purchases of horses are capitalized over the period of a few years and thereafter are charged to expense, a revision being required in case the number used changes materially.

Wagons and automobiles should be frequently checked up by physical inventory. Cost less depreciation is the basis of valuation. If numerous, a **delivery equipment register** or **ledger** should be kept showing the history of each unit.

Carriers and containers include bottles, baskets, boxes, kegs, barrels, etc. In some lines the customer is charged at cost for containers sent him and when he returns them they are redeemed. This requires the keeping of a **redemption fund.** In other lines the only feasible plan is a high depreciation rate, varying usually from 15% to 25% per annum.

Patterns, molds, etc., should be charged, preferably, to the particular job for which made. Where products are standardized, this plan may be departed from, but in any event such items should be rapidly depreciated.

BUILDINGS.—The basis of valuation is cost less depreciation. If buildings are bought for cash, purchase price plus any expenditures incident to title acquisition is the cost. If purchased by issuance of securities, it is customary to regard the par value of the securities issued as the value of the building, and in the absence of fraud such values usually stand the test of inspection by courts. The **real value** of the securities issued in payment is involved, and this involves a valuation of all assets, including the ones purchased by such issue of securities, and consideration of all liabilities, as well as earning power. When buildings are constructed by the company which owns and uses them, cost includes not merely labor, material, and overhead, but also any other expenses incurred to further construction—architect's fees, licenses, permits, interest on borrowed money during the construction period, costs incurred in connection with accidents, damages, strikes, etc. Costs of preparing the site, such as wrecking of old structures, are properly capitalized. Where a building comes into use in sections as prepared for occupancy, expenses incurred in connection with occupied sections become revenue charges, whereas those applicable to sections not ready for occupancy should be capitalized. In case of completed buildings, changes in interior arrangement or equipment should be capitalized only in case they result in greater earning power. A **subsidiary record** of buildings showing details of costs is essential for adjustment of fire losses, as well as for the routine of charging off of depreciation. See tables of depreciation rates in section on "Depreciation."

LAND.—Land is not a wasting asset. It is or is not desirable to keep separate accounts for separate parcels of land, according as they do or do not require different treatment. Sufficiently detailed explanation should accompany the account to enable one at any time to ascertain the **component parts** of cost. Among these are purchase price, purchasing agent's commission, title search and guaranty (if borne by purchaser), notarial and recording fees, taxes accrued at date of purchase, and assessments for local improvements.

Cost is ordinarily the basis of land valuation; therein being included, in addition to above items, cost of improvement, such as draining, filling, grading, and leveling. Sometimes the cost of constructing dams, dikes, embankments, and slide is added. In case of **mining land,** cost of stripping and tunneling in preparation for removal of ores may properly be added to cost of land.

So long as land is used for the purpose for which purchased, it should neither be depreciated nor appreciated. If desired to indicate market value, this can be done in a footnote.

Land normally appreciates owing to scarcity, location, and adaptability. This appreciation is sometimes called the **unearned increment.**

Issue of bonds secured on land is sometimes regarded as justification for bringing appraised value of land upon the books in excess of cost, because otherwise the full value of security does not appear. When this is done, the increased valuation should be offset on the credit side of the books by a **Reserve for Appreciated Land Value.**

When **depreciation** of land is clearly evident, provision should be made to cover it, so that the loss will not fall entirely in one period.

Land purchased to meet future requirements is an **investment.** In the accounts it should be segregated from land used for operating purposes. It should ordinarily be carried at cost. **Carrying costs** are additions to the investment and should be capitalized up to date such use begins. A **reserve** should be set up for the amount of such carrying charges, to become an addition to surplus when such land is put to its intended use.

Land donated should ordinarily be brought on the books at a **fair appraised**

value, and the credit made to Donated Surplus. Sometimes, however, a **nominal valuation** is used. If the gift is conditional and subject to reversion if conditions are not fulfilled satisfactorily, it should not be shown as an asset.

Realtors deal in land as stock-in-trade, in which case it is a current asset. Costs of preparing such land for marketing should be added to it. Portions of the land may be appropriated for streets, alleys, parks, etc. The cost of such land should be prorated over that which is to be sold as plots. Ordinarily all costs should be kept by plots to permit determination of profit or loss on each transaction. After the stage of sale is reached, all costs should be regarded as operating costs to be charged against revenue. It is permissible to charge them as costs, however, if suitable valuation reserves of equal amount are set up.

WASTING ASSETS.—These are assets subject to depletion, such as **mineral deposits** and **timber lands.** The supply of this kind of assets is diminished by being used up or disposed of. Because of the peculiar character of such assets, it is recognized as proper to return a part of capital in dividend payments.

Valuation of Wasting Assets.—The valuation of wasting assets is necessary for a correct accounting for invested capital and the consequent determination of income for income tax purposes. In *Stratton's Independence, Ltd.* v. *Howbert*,[30] it was decided that ores before mined do not possess any latent or occult values but should be valued on practical market considerations. The income tax law of 1913 recognized an allowance for depletion "not to exceed 5 per cent of the gross value at the mine of the output for the year for which the computation is made." Nothing was said in the law as to what was the proper basis for determining **total value** to be written off for depletion. The law of 1916 provided that the depletion allowances should not exceed "market value in the mine of the product thereof which has been mined and sold during the year for which the return and computations are made," but the total thus allowable was not to exceed original investment, or, if the deposit was purchased before Mar. 1, 1913, fair market value as of that date. The 1918 law provided for a "reasonable allowance for depletion . . . according to the peculiar conditions in each case, based upon cost including cost of development not otherwise deducted." In case of properties acquired before Mar. 1, 1913, the **fair market value** as of that date is the basis. Further provision was made for discovery of natural resources on or after Mar. 1, 1913, where fair market value is "materially disproportionate to cost," in which case **fair market value** as at discovery date or within 30 days after discovery is the basis.

Two bases for depletion charges are thus introduced, viz., **cost** and **fair value.**

Until the advent of the income tax, the most authoritative interpretations of depletion theory were that the depletion allowance should be based strictly on **original cost,** the only effect of new discoveries being to lessen amount of depletion per unit of output. The present theory and its application are thus stated by Wm. B. Gower:[31]

Theory:

1. That gradual exhaustion of the ore body is an element of expense which should be taken up in each and every fiscal period during which minerals continue to be won from the mine, at a more or less constant rate per ton.

2. That the total expense of this character to be absorbed in the operating accounts is the intrinsic value of the mine content (in place, en bloc) which existed from the beginning, although much of it may have been latent and determined only by "extension in depth."

3. That by the term "intrinsic value of the mine content" as used above is meant the product of two factors:

[30] 231 U. S. 399 (decided Dec. 1, 1913).
[31] *Journal of Accountancy*, Aug. 1918, pp. 85–86.

(a) The tonnage of mine content as finally ascertained.

(b) A unit price per ton representing the bedrock value of the average grade of ore, in place, en bloc, including proved ore, probable ore, and prospective ore, estimated at the commencement of business. In bedrock value the price of metals in estimated mine content is calculated at some figure between "basic" and "normal," cost of production and selling is calculated at maximum probability; the rate of mining and the life of the property must be estimated; from these factors a discounted or present value at true rate of interest is obtained; and this capital value is then reduced by a substantial value due to the element of risk.

Application of theory:

1. The depletion expense of each and every fiscal period during which mining operations occur is the tonnage of ores extracted multiplied by the more or less constant rate per ton established by original estimate of value in place.

2. The rate per ton of ore extracted, for purposes of the depletion expense computation, would change only in the event of subsequent discovery of relatively large bodies of ore of a grade differing widely from the original estimates.

3. In the case of "extension in depth" developing new values, it may be necessary from time to time to adjust the book value of the mining property, in order to harmonize with intrinsic value.

As stated by Gower, the theory of depletion requires occasional adjustment of book values of natural resources to keep them in agreement with progressive development resulting from new discoveries. In case of valuations made as of Mar. 1, 1913, to bring books into agreement with fair valuation as of that date, a **special surplus** account should be credited for the amount of the increase.

Treasury regulations governing methods of making valuations were last revised as of Dec. 19, 1920. Owing to frequent modifications, detailed requirements cannot be discussed here. Main requirements are that the valuation as of a specified date must be made "in the light of conditions and circumstances known at that date, regardless of later discoveries or developments in the property or subsequent improvements in methods of extraction and treatment of the mineral product."

The value should be such as would be established as the result of a bona fide transfer between a willing buyer and a willing seller as at the date in question.

Where cost serves as a basis for determination of depletion charges, the Treasury requires that the basis shall be the fair market valuation as of a "basic date," i.e., Mar. 1, 1913, in case of property acquired before that date, the date of acquisition in case of property acquired on or after Mar. 1, 1913, or the date of discovery, or within 30 days thereafter in case of property discovered after Mar. 1, 1913.

Fair Market value is the amount which "would induce a willing seller to sell and a willing buyer to purchase."

Treasury regulations provide that where fair market value as of a given date is to serve as the depreciation base, such valuation must be determined "in the light of conditions and circumstances known at that date, regardless of later discoveries or developments."

The Treasury has adopted the **present value method** of valuation, but considers any and all factors throwing light on what market value is. Among these are: cost, actual sales and transfers of similar properties, market value of stocks or shares, royalties and rentals, value fixed by owner for purposes of capital stock tax, valuation for local or state taxation, partnership accountings, records of litigation in which the property was in question, the amount at which the property may have been inventoried in probate court, and disinterested appraisals by approved methods.

Present Value Method.—The following principles have been laid down by the Natural Resources Division of the Income Tax Unit of the Treasury Department:

1. Increase in mine values is not unearned increment since the work of development merely develops what already existed in the ground; it does not add to values in the sense that the value of real estate is enhanced by community development, improved methods of transportation, and so on.
2. That exhaustible capital values must be recognized.
3. That an allowance must be made not only for the return of cost but also for the replacement of exhausted mineral.
4. That mining must be regarded as a continuing industry, because organizations built up to engage in the successful exploitation of mines are of too great value to be permitted to be discontinued by the exhaustion of any one property.

The present value method has been approved by the United States Supreme Court, the American Institute of Mining and Metallurgical Engineers, and other competent authorities.

To determine fair market value by this method, the following factors must be determined for each deposit:[32]

1. The total quantity of mineral in terms of the principal or customary unit (or units) paid for in the product marketed.
2. The average quality or grade of the mineral reserves.
3. The expected percentage of extraction or recovery in each process or operation necessary for the preparation of the crude mineral for market.
4. The probable operating life of the deposit in years.
5. The unit operating cost, i.e., cost of production exclusive of depreciation and depletion.
6. The rate of interest commensurate with the risk for the particular deposit.

In case of **well-developed properties,** much of this information can be derived from past operating experience. Allowance should be made for probable future variations in rate of exhaustion, quality of mineral, percentage of recovery and costs of producing and selling. If past operating experience is lacking, the information may be deduced from concurrent evidence. The Treasury requires that deposits of different grades, locations, and probable dates of extraction be valued separately.

Utilizing the required information, present value is found by—

1. Finding the total expected operating profit, secured by multiplying the number of units of mineral recoverable in marketable form by the difference between selling price and operating cost per unit.
2. Reducing the total expected operating profit for each mineral deposit to a present value as of the basic date (Mar. 1, 1913, or a later date) at the rate of interest commensurate with the risk involved. This value should be further reduced by the value, as of the basic date, of the depreciable assets and prospective capital additions essential in the process of realizing said profits.

Segregation of Minerals.—Minerals which cannot be mined before a definite future period in time should be classed separately. The Mines Taxation Committee of the American Institute of Mining and Metallurgical Engineers

[32] Reg. 62, Art. 256.

suggests that no mine be valued on an estimated operating life of more than 45 years. R. V. Norris says:[33]

> . . . a proper time limit for available mineral shall be such that its present value on an annuity basis would be 90% of the present value of an infinite amount, i.e., a perpetual annuity. At 6% discount rate this time limit would be 40 years' life, and at 8%, 30 years, which may properly be considered as a maximum.

Of minerals which cannot be extracted within, say, 40 years, there are two kinds: (1) known reserves, and (2) unknown deposits subject to future discovery. For known minerals which cannot be worked within 40 years little is paid, because the discounted value of a dollar due in 40 years is a small amount. Depletion per unit of output should be based on the amount which can be extracted, say, within 40 years. If additional quantities are included, depletion per unit is too small.

Minerals not to be extracted within a reasonable time should be segregated as an investment not subject to depletion. When such reserves are ultimately worked, there will be no depletion allowance because total investment will have been returned before the reserves are exploited.

Value at Given Date.—Value at a given date for depletion purposes is:

The amount secured by discounting, at compound interest, to that date, total net profits year by year, less
The discounted value, at basic date, of the depreciable assets and capital additions thereto necessary to realize the profits.

The amount thus secured, when applied to the estimated available tonnage, for depletion purposes, will return the value of the property when the estimated tonnage is exhausted.

The Engineers' Committee of the National Coal Association suggests that the basis for determining the amount to be allowed during any one accounting period be based on earnings instead of on amount of ores extracted, so that the burden is more equitably distributed, prosperous years bearing a heavier burden and lean years a lighter one than if depletion is applied on a tonnage basis.

Rate of Interest.—Determination of rate of interest involves consideration of risk involved, changing rates of interest over periods of many years' duration, and so on. Norris considers 6% proper in most cases, because it has the authority of being a standard legal rate. He says a higher rate may be used where there is question as to extent or continuity of the deposit.

The Mines Taxation Committee of the American Institute of Mining and Metallurgical Engineers suggests a rate of 4%, compound interest. The Treasury uses 6% for anthracite mines, and 8% for bituminous mines. C. E. Grunsky says the rate should vary with the risk.[34] Hoover lists the risks of mining as follows:

1. Risk of continuity in metal contents beyond sample faces.
2. Risk of continuity in volume through blocks estimated.
3. Risk of successful metallurgical treatment.
4. Risk of metal prices, in all but gold.
5. Risk of properly estimated costs.
6. Risk of extension of ore beyond exposures.
7. Risk of management.

Hoskold's Table.—The following table is used by the Treasury in valuations made by discounting prospective earnings.

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[33] Columbia Income Tax Lectures, 1921, p. 230.
[34] Valuation, Depreciation and the Rate Base, p. 241.

Present Worth of Each Dollar of Operating Profit

Accumulated during life of n years, assuming annual rate of production and operating profits per unit to be uniform and providing for interest on present worth at r' per cent annually and a payment into a sinking fund which at 4 per cent, interest compounded annually, will amount to the present worth, i.e., provide for return of capital, at the end of life.

Yrs.	6%	7%	8%	9%	10%	12%	15%
1	.943396	.934579	.925925	.917431	.909090	.892857	.869565
2	.908766	.892946	.876891	.861777	.847176	.819408	.781010
3	.876389	.853937	.832607	.812317	.792993	.756976	.708694
4	.846052	.818370	.792418	.768072	.745178	.703254	.648525
5	.817570	.785469	.755780	.728260	.702675	.656540	.597680
6	.790781	.754961	.722245	.692177	.664641	.615547	.554148
7	.765540	.726638	.691435	.659519	.630410	.579284	.516457
8	.741717	.700174	.663032	.629635	.599440	.546979	.483507
9	.719198	.675487	.636765	.602251	.571286	.518017	.454455
10	.697880	.652354	.612404	.577066	.545581	.491906	.428649
11	.677672	.630699	.589748	.553820	.522019	.468244	.405574
12	.658489	.610277	.568624	.532281	.500344	.446702	.384818
13	.640258	.591066	.548887	.512330	.480337	.427009	.366049
14	.622911	.572950	.530401	.493737	.461815	.408936	.348995
15	.603385	.555828	.513053	.476390	.444619	.392292	.333431
16	.590625	.539630	.496741	.460167	.428610	.376914	.319170
17	.575581	.524283	.481376	.444963	.413671	.362663	.306056
18	.561205	.509716	.466880	.430685	.399699	.349420	.293955
19	.547455	.496371	.453178	.417253	.386603	.337082	.282754
20	.534292	.482719	.440211	.404592	.374302	.325559	.272358
21	.521680	.470171	.427920	.392637	.362729	.314474	.262682
22	.509587	.458216	.416255	.381334	.351818	.304658	.253654
23	.497979	.446805	.405166	.370630	.341517		
24	.486835	.435903	.394619	.360479	.331775		
25	.476122	.425477	.384571	.350840	.322549		
26	.465820	.415496	.374988	.341675	.313799		
27	.455905	.405933	.365839	.332951	.305488		
28	.446356	.396767	.357096	.324637	.297587		
29	.437155	.387970	.348734	.316704	.290063		
30	.428283	.379520	.340726	.309127	.282893		
31	.419724	.371399	.333054				
32	.411462	.363589	.325695				
33	.403483	.356072	.318631				
34	.395772	.348832	.311846				
35	.388318	.341856	.305324				
36	.381108	.335128	.299049				
37	.374130	.328637	.293009				
38	.367375	.322371	.287190				
39	.360832	.316318	.281581				
40	.354491	.310468	.276171				
41	.348345	.304811	.270950				
42	.342385	.299339	.265909				
43	.336602	.294043	.261038				
44	.330990	.288913	.256328				
45	.325545	.283945	.251774				
46	.320248	.279128	.247367				
47	.315[illegible]07	.274459	.243100				
48	.310109	.269929	.238967				
49	.305250	.265533	.234962				
50	.300525	.261266	.231079				

Factors in Above Table

$$\frac{P_n}{n} = \cfrac{1}{\cfrac{nr}{R^n - 1} + nr'}$$

Derived from Hoskold's Formula

$$\left.\begin{array}{l}\text{Present value of \$1 per annum in } n \\ \text{years, interest on capital being at} \\ \text{one rate, } r'\text{, and for redemption an-} \\ \text{other rate, } r\text{, per cent.}\end{array}\right\} = P_1$$

$$P_n = \cfrac{1}{\cfrac{r}{R^n - 1} + r'} \quad \text{where } R^n = (1+r)^n$$

Wasting Assets Illustrated.—Copy of memorandum prepared by Metals Valuation Section of the Income Tax Bureau in determining valuation of a mine at Mar. 1, 1913.

Ore reserves Mar. 1, 1913	875,000 tons
Gross value Mar. 1, 1913 (875,000 × \$12.78)	\$11,182,500
Selling price of metal in ore reserves—actual or anticipated.	
Gross cost Mar. 1, 1913 (875,000 × \$7.1537)	6,259,487
Cost of mining and extracting metal in ore reserves—actual or anticipated and exclusive of depletion and of depreciation of plant.	
Art. 206 of Reg. 62, defines such "cost" as comprising all current expenses of producing, preparing and marketing the mineral product sold, exclusive of federal income and profits taxes, allowable capital additions as defined in Art. 222 of Reg. 62, and deductions for depreciation and depletion, but including cost of repairs and replacements necessary to maintain the plant and equipment at its rated capacity and efficiency.	
Net returns (actual or anticipated)	\$ 4,923,013
Present worth (discounting at 15% and 4%, using 8-year life).	
Present worth is inclusive cost of plant and is based on earnings on capital or purchase price at the rate of 15% per annum and making payments into a sinking fund which at 4% compounded annually will provide for the return of capital at end of 8-year life.	
The above table is calculated for the investment of a sinking fund at 4%, the variables being the rate of discount on capital and the years of life. From the table we find that the present value of each dollar of operating profit accumulated during the life is .483507.	
Present worth therefore is \$4,923,013 × .483507 =	\$ 2,380,311
Deduct cost of plant (actual or prospective)	1,000,000
The Treasury deducts the full cost (actual or prospective) of the plant from the Mar. 1, 1913, present value of the mine on the assumption that the plant must be constructed and the full investment therefor made at the beginning of the period during which the ore is to be removed. If the plant had been constructed prior to Mar. 1, 1913, its value at that date would be deducted.	
Market value of ore en bloc Mar. 1, 1913	\$ 1,380,311
Unit of depletion per ton (\$1,380,311 ÷ 875,000 tons)	\$ 1.5775

LEASEHOLDS.—A lease may be paid for in annual sums or in a bonus and annual sums. The bonus is a deferred charge to be spread as an additional item of rent over the period of the lease.

Ordinarily leases run for periods up to 99 years. In New York State, 63 and 84 years are favorite terms.

When an original lessee sells a lease outright for a fixed sum sufficient to cover the remaining period of the lease, this sum is figured as the present worth of an annuity equal to a fair yearly rental.

When a lease is bought outright or a bonus is paid, it appears on the books at a valuation. In case the balance sheet is to be used for credit purposes and, owing to great appreciation in property values, the lease is worth much more than its book value, it is proper to indicate this in a footnote, or else to incorporate it in the balance sheet with an offsetting reserve.

The amount at which the lease is carried on the books must be amortized over the period of the lease, the periodic charge being to **Rent.**

If title to the building constructed on the leased land is to pass to the owner of the land upon expiration of the lease, the cost of the building must be written off over the life of the lease.

Theoretically any excess of depreciation over normal resulting from this situation is **rent,** but is not usually segregated.

INTANGIBLE ASSETS.—These should always be listed separately to permit verification.

The chief types are good-will, patents, copyrights, trade-marks, franchises, going concern value, and organization expense.

Patents are grants by a government giving to an inventor exclusive right to make and sell his invention for a term of years.* Patents should be capitalized at cost. When paid for in stock, the determination of cost is less simple than when paid in cash. There can be no objection to basing value upon **par** of stock, in absence of fraud or deceit. Overvaluation arising in this manner means higher amortization charges and consequently higher costs of production.

Where an experimental laboratory is conducted, expenditures directly unproductive of results are properly regarded as indirect costs of such patents as are developed from time to time.

Costs of defending rights to patents may properly be capitalized.

Ordinarily patents should be written down on the basis of **expiring time,** the distribution being made over the life of the patents. In many instances, supersession or obsolescence may shorten a patent's useful life. When this occurs, the patent should be written off more rapidly.

Some authorities advocate rapid writing down of patents during the early years when their earning capacity is greatest.

Sometimes the life of basic patents is extended by securing auxiliary patents on improvements made on the old invention. When this policy is pursued, a feasible plan is to write off 1/17 of total value to date at end of each year.

In writing down patents the charge is to expense and the credit to a reserve for depreciation. The incidence of this depreciation expense is to **manufacturing cost** or to **selling cost,** according to circumstances.

Copyrights are issued for a term of 28 years, with renewal privilege for a like period if application therefor is made within one year prior to expiration of the original copyright. They should be capitalized at cost, which, in case of the original holder, usually consists only of fees. Appraisals should be made frequently and these will usually justify a very rapid writing down.

Trade-marks should be valued at cost, whether cost of development or cost of purchase. The principles of valuation are analogous to those applicable to good-will.

Franchises are frequently listed in the balance sheets of public utilities. They are privileges granted to a company to use public property. They may be perpetual, limited, or determinate. Franchises should be booked at cost of acquisition, including:

1. Lump sum payments, to the state or some division thereof, applicable to life of franchise.
2. Purchase price paid for assignment of rights and privileges by another company.
3. Legal and other fees paid to secure the grant.
4. All other legitimate expenses.

Depreciation of franchises depends on the terms of the grant. If the franchise is perpetual, there is no depreciation. If for a definite term of years, it should be prorated accordingly. If indeterminate, a liberal depreciation policy should be followed.

ORGANIZATION EXPENSES.—These should be written off rapidly. R. H. Montgomery suggests writing them off over the first 2 years' operation. They consist of attorney's fees, incorporation fees, cost of prospectuses, cost of soliciting stock subscriptions, promoters' and organizers' fees, cost of printing and issuing stock certificates, etc.

GOOD-WILL.—See section on "Good-Will."

SECTION 11

DEPRECIATION

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(For list of forms, see complete table of contents.)

SECTION 11

DEPRECIATION

General Principles

CAUSE OF DEPRECIATION.—Cause of depreciation may be generalized under three heads: **wear and tear, obsolescence,** and **inadequacy.** The specific causes are very numerous, and there are many factors affecting its rapidity and extent. Among these are: quality of construction, adequacy to meet future demands, method of operation, repairs and renewals, climate, etc. In case of such intangibles as patents, copyrights, and leaseholds, progress of depreciation may usually be assumed to be in direct proportion to expired time. Matheson[1] gives the following **causes of depreciation:**

1. Wear and tear.
2. Tenure of holding.
3. Permanency or steadiness of industry.
4. Exhaustion of raw materials.
5. Obsolescence due to new inventions, new product, or better ways to make the same product.
6. Vicissitudes and catastrophes not insurable.
7. Fluctuations in trade.
8. Inadequacy.

DEFINITION.—No satisfactory general definition can be given, since the term is usually employed in a limited sense. Sometimes it includes repairs, sometimes not. H. V. Hayes says depreciation is "loss in value which has occurred arising from the period during which the property of the undertaking has been in service." The Interstate Commerce Commission defines depreciation as "exhaustion of capacity for service," "lessening in cost value," and "lessening in worth of physical property." P. D. Leake defines it as "expired capital outlay." Sometimes attempts are made to express progress of depreciation between dates.

CLASSIFICATION OF DEPRECIATION.—**Unit depreciation** refers to a unit of plant. **Composite depreciation** refers to plant as a whole; it is the sum of depreciation of the units. Unit depreciation progresses until it causes displacement of the unit. Composite depreciation reduces a plant or system to a status of normal depreciation, after which further depreciation is prevented by replacements. Composite depreciation usually reduces investment in plant by about 20% or 30% of the original. If amount of outstanding stock is not diminished, composite depreciation results in overcapitalization,

[1] Depreciation of Factories, pp. 36–41.

because a part of the investment has disappeared. This may be prevented by reducing total capital through retirement of stock in an amount equal to composite depreciation, charging cost of retirement to revenue, or by creating a **replacement reserve** to offset depreciation. If not required for replacements, this reserve may be used to make extensions. Since no specific replacement is made in this case, it is impossible to charge reserve with cost of any particular unit of plant. It is charged only when some unit is discharged and regardless of time when new assets are installed.

Functional depreciation results from **obsolescence** or **inadequacy** of a plant or unit of plant. Its amount is determined by the extent to which service could be cheapened, in case of obsolescence, or bettered, in case of inadequacy. When written-down value of an old unit can be added to cost of a new one and still permit production to be carried on at a lower capital cost, the old unit is wholly obsolete or wholly inadequate. Inadequacy results from changes in financial policy, engineering progress, and unexpected developments. Preceding the time when inadequacy becomes effective, the margin of value is usually diminished more or less rapidly by the effects of invention or of increasing demand. Obsolescence resembles inadequacy, but it is a question rather of type and quality, than of size and power. An illustration is substitution of electric transmission for older forms of power conveyance.

DETERMINATION OF INADEQUACY.—Inadequacy may be determined on basis of capitalized cost of production of a unit of output, or by same method as is used to find obsolescence. Former method is better if more than one old unit of plant is required to do some work that one new unit will do. It is illustrated thus:

If total cost of producing a unit of output with an old machine is $20, and with new machine is $18, saving per unit is $2. If number of units of output produced with old machine is 100, total saving is $200. 200 ÷ .05 = 4,000, which is functional depreciation of old plant and amount over and above depreciated value of old plant which the company can afford to pay for a new machine, providing old one can be disposed of at depreciated value. Since amount that old property would bring at sale is probably small, it may be economical to retain it for some time after a more efficient type comes on the market.

OBSOLESCENCE.—Obsolescence becomes effective only when production can be carried on more cheaply by replacing a given unit the undepreciated or unrecovered cost of which is considered as a part of replacement cost. It is measured by the amount by which cost less salvage exceeds amount of depreciation already written off.

Determination of Obsolescence.—Following is an illustration of method of determining obsolescence:

Assume case of a machine which cost $10,000, possesses an estimated life of 10 years, and a scrap value of $1,000. Also assume that 5 years of useful life have expired and that at close of each year a depreciation reserve has been credited with 1/10 of ($10,000 − $1,000), or $900, so that there exists a reserve of $4,500. There is an additional $4,500 to be accounted for, either in form of future charges to depreciation or as obsolescence and inadequacy. Assume that at end of 5th year a new machine which costs $8,000 comes on market which will perform equivalent service at smaller total cost per unit of output. The two elements entering into cost of production are: (1) uncovered investment in machine, (2) necessary current expenses, as labor and power. Assume that an investigation shows these for old and new machines to be, respectively:

Old Machine		New Machine	
Unrecovered cost, i.e., cost less depreciation earned	$5,500	Unrecovered cost, i.e., cost less depreciation earned	$8,000
Current operating expense	600	Current operating expense	400

If money is worth 6%, capitalized cost of operating old machine is $600 ÷ .06, or $10,000, that is, it is equivalent to a capital investment of $10,000; whereas capitalized cost of operating new machine is $400 ÷ .06, or $6,666.67. Adding these to original costs of respective machines, we have:

For old machine:	
Original cost less earned depreciation	$ 5,500.00
Capitalized operating cost	10,000.00
Total capitalized cost	$15,500.00
For new machine:	
Original cost	$ 8,000.00
Capitalized operating cost	6,666.67
Total capitalized cost	$14,666.67

As compared with a new machine of equal capacity, the old machine is worth $4,666.67. This is obtained by deducting excess in total capitalized cost of old machine over that of new machine ($833.33) from the unrecovered investment in old machine ($5,500). As salvage value is only $1,000, to scrap it would mean a loss of $4,666.67 − $1,000, or $3,666.67, and no saving in total capitalized cost of production, because when old machine is valued at $4,666.67, it produces as cheaply as does the new machine. True total capitalized cost of production if old machine were scrapped would be:

Original cost of new machine	$ 8,000.00
Unrecovered cost of old machine (less salvage)	4,500.00
Capitalized operating cost	6,666.67
	$19,166.67

On the other hand, capitalized cost of operating old machine is only $15,000. If new machine could be bought for $8,000 − $4,166.67, or $3,833.34, new and old machines would be on a par and it would be immaterial whether replacement were made or not. Same would be true if capitalized operating cost of operating new machine could be reduced to $6,666.67 − $4,166.67, or $2,500 (which is an operating expense of $150 capitalized at 6%), for then we should have:

Original cost of new machine	$ 8,000.00
Unrecovered cost of old machine (less salvage)	4,500.00
Capitalized operating cost	2,500.00
	$15,000.00

Before a machine can be said to be obsolete, it must be shown that production can be carried on more cheaply with a new machine to whose cost has been added the unrecovered cost (less salvage) of the old one. Unless a machine is rendered entirely obsolete by a new invention, it is not affected, because it continues to be cheaper to operate the old machine than to scrap it and buy the new one.

DEPRECIATION BETWEEN DATES.—Lifetime of an asset is time which expires between date of installation and date of abandonment. If it costs

$100, and has a scrap or salvage value of $10, depreciation totals $90, repairs excluded. If life is 9 years, average annual depreciation is $10. It is usually assumed that depreciation is thus evenly spread over the lifetime of the assets. The Interstate Commerce Commission makes this assumption in its railroad valuations. The regulations of the Bureau of Internal Revenue assume equal amounts of depreciation in equal periods of time, but permit use of other bases.

FINANCIAL NATURE OF DEPRECIATION.—Depreciation is the financial effect of deterioration, wear and tear, obsolescence and inadequacy. In a broad sense it includes also depletion of mines. Invested capital has two aspects, cost and value. Accounting, and therefore depreciation, deals with cost rather than value. Replacement allowances should be made on the basis of cost of the unit to be replaced, not on basis of exchange value or replacement cost. Sometimes it is proper, in case of newly organized concerns, to capitalize depreciation as a developmental cost. Depreciation is an expense, and has been repeatedly so held by courts and commissions. It is a cost of production and should be allocated to cost of output or service. It approximates to a fixed charge. It was definitely recognized as a cost of service by the U. S. Supreme Court in *Smyth* v. *Ames*.[2]

DEPRECIATION vs. REPAIRS.—Ordinarily, repairs and depreciation require different treatment, but they are closely related problems. If the reserve is credited with enough to provide only for original cost of the asset in question, repair costs should be charged to income. The problem is to draw the line between repairs and minor replacements chargeable to the reserve. If a **detailed plant ledger** is kept the problem solves itself; otherwise there is some difficulty in making the division. Also the depreciation rate is dependent to some extent on policy pursued in making repairs. The depreciation reserve equalizes cost of renewal of parts so extensive that to charge them to income would result in excessive deductions in some periods. The distinction has been drawn in numerous instances, but no definite rule can be formulated. If depreciation is figured by straight-line method, inclusion of renewals and replacements in repairs chargeable direct to Profit and Loss tends to make the depreciation reserve excessive. Care should be used to keep cost of all items whose renewal is charged to current operations out of the amount on which the reserve is reckoned.

DEPRECIATION vs. MAINTENANCE.—Maintenance secures daily efficiency but does not scientifically prevent impairment of total investment. This is accomplished by means of depreciation allowances based on a comprehensive plan. Maintenance cost ordinarily increases with advancing age of assets. It does not prevent a condition of overcapitalization resulting from a condition of normal depreciation. In *Pioneer Telegraph Co.* v. *Westenhaver*,[3] the Supreme Court of Oklahoma stated that current maintenance "represents only the cost of those units that had become so badly depreciated that they had to be replaced during that year," and found that 7% of "reproductive value" of physical property would be a proper annual allowance for depreciation.

DEPRECIATION ESTIMATED IN GROSS.—When it is decided to include repairs in depreciation, cost of repairs is deducted from total gross allowance each accounting period to determine the amount to be set up as a reserve. If, on a predetermined basis, gross depreciation for a given period

[2] 169 U. S. 466.
[3] 118 Pac. 354 (Jan. 10, 1911).

is fixed at $20,000, and during that month $11,000 is expended for repairs, $9,000 will be credited to the reserve. Entries are as follows:

Repairs	$11,000	
Cash		$11,000
For repairs made during month.		
Depreciation Expense	$ 9,000	
Reserve for Depreciation		$ 9,000

This plan possesses the advantage of providing an equal charge from month to month, but makes the amount reserved for depreciation dependent upon the amount expended currently for repairs, which is illogical. Consequently, there is no guaranty that cost will be amortized during lifetime of a given unit.

NORMAL DEPRECIATION.—If the depreciation reserves are properly set up, they express approximately the amount of normal depreciation existing at a given time.

SALVAGE AND SCRAP.—Salvage is the value an article possesses for some use other than that to which it has been devoted. When so used it possesses an additional **cycle of life.** Scrap value is what an article is worth if broken up.

SUPERSESSION.—Supersession consists in the replacement of an asset by one better adapted to perform its work.

EARNED DEPRECIATION.—Earned depreciation is depreciation for which compensation has been received through revenue. It may be retained in form of a fund or otherwise employed.

AMORTIZATION.—This word is used in several senses. It sometimes refers to the liquidation of a debt, especially by establishment of a sinking fund. It sometimes refers to the amount chargeable to expense due to expiration of leaseholds, amount so chargeable being proportionate to life expired during a given period. It sometimes refers to writing down of book figures to make them reflect actual conditions. It is sometimes used synonymously with depreciation.

CASUALTIES.—Casualties are industrial accidents, time of occurrence and cost being uncertain. Casualties result from floods, storms, explosions, and other fortuitous events. The Bureau of Internal Revenue includes casualties among its deductions allowable under the law for "losses sustained during the taxable year and not compensated by insurance or otherwise, if incurred in trade or business."

CYCLES OF LIFE.—A cycle of life is comprehended in the whole period of usefulness of an article in a given position. Second cycle of life determines salvage at end of first cycle.

DEFERRED MAINTENANCE.—Deferred maintenance is the measure of the neglect to make all ordinary repairs such as are necessary to keep a plant in good running condition. Ordinarily it is not reflected in the accounts, but it should be accounted for in the same way as other expenses. "Accrued repairs" may be given due consideration by charging current maintenance and crediting a deferred maintenance reserve. When repairs are made later on, they are charged to this reserve.

UNEARNED DEPRECIATION.—Unearned depreciation is similar in some respects to deferred maintenance. It is that depreciation which has been

incurred in giving service and for which no return through revenue has been received. From a purely accounting point of view it is equivalent to a deficit.

UNCOVERED DEPRECIATION.—Uncovered depreciation is like unearned depreciation, in that it is not reimbursed through revenue, but unlike it, in that it should not be so reimbursed, because it occurs in property not presently useful in serving the public. It arises only in connection with public utilities, and is the result of unwarranted investments.

AVERAGE LIFE.—Average life is time in years during which the depreciation of all parts amounts to original cost less salvage value. Assume case of a plant consisting of five units with original cost, estimated lives, and salvage values as follows:

Units	Original Cost	Estimated Life in Years	Salvage Value	Cost less Salvage
Unit 1...............	$ 1,000	5	$ 100	$ 900
" 2...............	5,000	10	1,000	4,000
" 3...............	20,000	15	2,000	18,000
" 4...............	30,000	20	5,000	25,000
" 5...............	50,000	23	4,000	46,000

The cost of depreciation each year for the several units is as follows:

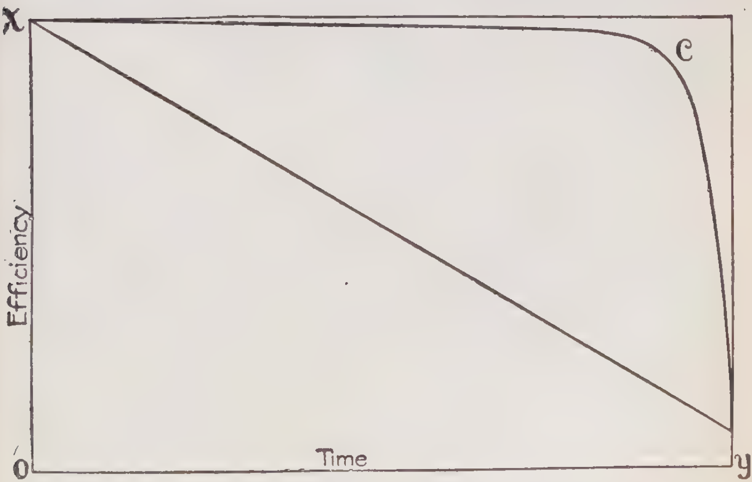
Units	Cost less Salvage		Estimated Life in Years		Cost per Year
Unit 1..............	$ 900	÷	5	=	$ 180
" 2..............	4,000	÷	10	=	400
" 3..............	18,000	÷	15	=	1,200
" 4..............	25,000	÷	20	=	1,250
" 5..............	46,000	÷	23	=	2,000
	$93,900	÷			$5,030=1866. yr.

Cost less salvage expires in 18.66 years, which is average life of the plant. This should not be confused with the average of the lives of the various units, which is 14.6 years, a figure of no special significance.

DEPRECIATION BASE.—By the "depreciation base" is meant the amount upon which the rate is computed. **For private industry** the base should ordinarily be the cost of the asset in question, because this is the amount to be returned through revenues. **In manufacturing industries** the depreciation base has a direct bearing upon price-making and competition. Its selection should be made with a view to its effect on costs. **In publicly regulated industry** its selection should be made with reference to interests of investors and the public. **Various bases** have received the support of courts and commissions, among these being cost, reproduction cost, and depreciable property. Some companies retain a percentage of gross revenue to cover depreciation or a larger percentage to cover both depreciation and maintenance. The objection to this method is that the amount retained bears no

relation to actual depreciation. The following table taken from Floy[4] shows the policy of companies:

Name of Company	Per Cent of Gross Revenue Expended or Appropriated for: Maintenance	Depreciation
Milwaukee companies:		
Railway departments	11.30	9.90
Gas, electric light, and steam heat departments	6.15	8.12
United Railways Co. of St. Louis	13.67	10.00
Union Electric Light & Power Co., St. Louis	4.95	16.00
Suburban Electric Light & Power Co.	7.10	10.85
Detroit Edison Co. and subsidiaries	6.45	10.23
Omaha & Council Bluffs Street Railway Co.	7.00	10.00
Chicago Street Railways	6.00	8.00
Philadelphia Rapid Transit Co.	Undivided	15.00



FORM 1. Curves Showing Progress of Uniform Depreciation and of Diminishing Efficiency

The New York Edison Co. bases its depreciation charge on kilowatt-hours output. Some street-car companies charge a certain amount for depreciation for each car-mile run. In Cleveland 5 cents per car-mile has been allowed to cover both maintenance and depreciation. In Brooklyn the subsidiaries of the Brooklyn Rapid Transit system have allowed a rate varying from 2.7 to 4.4 cents per car-mile for equipment of surface roads, and from 1.4 to 2

[4] Valuation of Public Utilities, p. 199.

cents per car-mile for equipment of elevated or partly elevated railways. In *Buffalo Gas Co.* v. *City of Buffalo*,[5] 5.3 cents were allowed on each 1,000 cubic feet of gas sold, on an assumed sale of 633,000 M. cubic feet.

DEPRECIATION AND EFFICIENCY.—Plant must be kept at a certain degree of efficiency sufficient to give satisfactory service. **Loss of efficiency** in plant as a whole is not proportionate to depreciation. Composite depreciation may be accompanied by little or no loss of efficiency. Buildings, etc., remain in unimpaired efficiency for years. **Efficiency** is the practical test of present effectiveness. It is only one factor in value, however. **Value** depends not only on present usefulness, but also upon the time during which such usefulness will continue. Form 1 represents the character of depreciation figured on a straight-line basis, also of efficiency, both curves applying to same asset. If distance from O to X represents efficiency of a new machine, or 100%, and distance from O to Y represents life of same machine, then line XY represents progress of theoretical straight-line depreciation, and curved line XCY represents decline in efficiency.

ACCOUNTING PRINCIPLES.—The same general principles apply to depreciation accounting as to other phases of accounting. Assume that the following balance sheet represents the condition of Company A, newly organized:

Balance Sheet of Company A, as at......

Factory Building	$100,000	Capital Stock	$160,000
Machinery	25,000		
Other Assets	35,000		
	$160,000		$160,000

The assets subject to depreciation are factory building and machinery. Assume the factory building will require replacement at end of 50 years, and machinery at end of 25 years. Annual depreciation is $2,000 for the building, and $1,000 for machinery. Management neglects to make allowance for depreciation, profit for 1st year is shown as $15,000, and this is distributed as dividends. Process is continued 25 years, when machinery requires replacing. Assuming that no essential changes have occurred in the balance sheet, that new machinery can be bought at same cost as the old cost, and ignoring salvage, management is faced with problem of securing $25,000 with which to buy machinery. "Other assets," amounting to $35,000, cannot be converted into cash because they are needed in present status. $25,000 is borrowed at 5% to make the replacement, after which the balance sheet appears thus:

Balance Sheet of Company A, as at......

Factory Building	$100,000	Capital Stock	$160,000
Machinery	25,000	Notes Payable	25,000
Other Assets	35,000		
Deficit	25,000		
	$185,000		$185,000

[5] 3 P. S. C., 2d D. N. Y., 553.

Failure to allow for depreciation of machinery has caused a deficit of $25,000; also a fixed charge of 5% on $25,000, or $1,250. A further deficit of $50,000 is hidden in the "Factory Building" account. After another 25 years, both building and machinery require replacement at a cost of $125,000. No reserves having been set up, the balance sheet appears as follows after this is done:

Balance Sheet of Company A, as at......

Factory Building	$100,000	Capital Stock	$160,000
Machinery	25,000	Notes Payable	150,000
Other Assets	35,000		
Deficit	150,000		
	$310,000		$310,000

There is now a deficit of $150,000, and a fixed charge of 5% on $150,000, or $7,500. Equity remaining is $10,000—all that is left of original investment of $160,000.

The correct depreciation policy will now be illustrated. In above illustration, at end of 1st year following entry is made in the journal:

Profit and Loss	$3,000	
Reserve for Depreciation of Building		$2,000
Reserve for Depreciation of Machinery		1,000
To charge Profit and Loss with the year's depreciation expense.		

These are termed "valuation reserves" because of their relation to the assets whose depreciation they measure. The charge is to a nominal account, while the credits are to real accounts. The purpose of these reserve accounts is to record accrued depreciation and make it possible to retain the assets at cost in the ledger. Under this policy, at the end of 25 years the balance sheet appears as follows:

Balance Sheet of Company A, as at......

Factory Building	$100,000	Capital Stock	$160,000
Machinery	25,000	Res. for Depr. of Bldg.	50,000
Other Assets	110,000	Res. for Depr. of Mach.	25,000
	$235,000		$235,000

The building has passed one-half its life and has depreciated $50,000. Machinery requires replacement. Either cash or other assets have been retained in sufficient amounts to make the replacement. Even if found desirable to borrow, the financial status will not be weakened. If $25,000 is borrowed the transactions are:

Cash	$25,000	
Notes Payable		$25,000
For loan to make replacement.		
Reserve for Depreciation of Machinery	$25,000	
Machinery		$25,000
To write off old machinery.		
Machinery	$25,000	
Cash		$25,000
For purchase of new machinery.		

The balance sheet now stands thus:

Balance Sheet of Company A, as at......

Factory Building	$100,000	Capital Stock	$160,000
Machinery	25,000	Res. for Depr. of Bldg.	50,000
Other Assets	110,000	Res. for Depr. of Mach.	00
		Notes Payable	25,000
	$235,000		$235,000

Note that loan is secured without causing a deficit. This is because old machinery was written off against its corresponding valuation reserve, whereas in the preceding illustration there was no reserve and it was necessary to write off old machinery against Capital account. Whether preferable to borrow or to retain sufficient cash to avoid borrowing, is a question of policy to be determined by circumstances. Preferably, the depreciation reserve is shown as a deduction from corresponding asset in the balance sheet, as follows:

Balance Sheet of Company A, as at......

Factory Building	$100,000		Capital Stock	$160,000
Less: Res. for Depr.	50,000	$50,000	Notes Payable	25,000
Machinery		25,000		
Other Assets		110,000		
		$185,000		$185,000

RESERVES vs. FUNDS.—The difference between reserves and funds is illustrated below:

Company *X* owns a factory building which cost $50,000 and possesses an estimated useful life of 30 years. Each year depreciation reserve is credited and depreciation expense charged with $1,000. At end of 1st year the balance sheet appears thus:

Balance Sheet of Company X, as at......

Factory Building	$ 50,000		Capital	$100,000
Less: Res. for Depr.	1,000	$ 49,000	Dividends Payable	2,000
Other Assets		53,000		
		$102,000		$102,000

Capital is preserved by this procedure, for had no depreciation charge been made the balance sheet would be:

BALANCE SHEET OF COMPANY X, AS AT......

Factory Building	$ 50,000	Capital	$100,000
Other Assets	53,000	Dividends Payable	3,000
	$103,000		$103,000

and after payment of dividends:

BALANCE SHEET OF COMPANY X, AS AT......

Factory Building	$ 50,000	Capital	$100,000
Other Assets	50,000		
	$100,000		$100,000

which makes no allowance for the depreciation which has accrued.

The essential step is the retention of sufficient funds by means of the depreciation charge. If these remain a part of the general funds, they are reinvested and perhaps give rise to no further consideration.

Depreciation funds may be created in accordance with the same formulas as are sinking funds. If equal instalments are allowed to accumulate at compound interest, the formula is as follows: v representing the amount to which the fund is to accumulate, r the rate of interest plus 1 and n the number of years to run:

(1)
$$x = \frac{v\ (r-1)}{r^n - 1}$$

Logarithms can be used to solve the formula if term of years is large, because of difficulty of raising r to the nth power by multiplication.

If interest is not added to principal, the amount of each instalment is determined thus:

(2)
$$x = \frac{v}{n}$$

In this formula, v is the sum accumulated after n years by paying equal instalments, x, into the fund.

Taking the simpler case first, if Company Y wishes to establish a replacement fund for a building costing $25,000, with an estimated life of 25 years, by application of formula (2) we find, ignoring salvage, the amount of each instalment to be $1,000, thus:

$$x = \frac{25{,}000}{25} = \$1{,}000$$

Assuming each year's depreciation amounts to $1,000, this is brought into books by this entry:

Profit and Loss (or Depreciation)	$1,000	
Reserve for Depreciation of Building		$1,000
For depreciation accrued.		

Having decided to establish a depreciation fund for replacement of the building, and having found a suitable manner in which to invest the $1,000, the following entry is made:

Depreciation Fund for Building	$1,000	
Cash		$1,000
For investment of cash in a depreciation fund.		

The balance sheet then appears:

Balance Sheet of Company Y, as at......

Buildings	$25,000	Capital	$50,000
Other Assets	25,000	Res. for Depr. of Bldg.	1,000
Depr. Fund for Bldg.	1,000		
	$51,000		$51,000

or, better still:

Balance Sheet of Company Y, as at......

Building	$25,000	Capital	$50,000
Less: Depr. Res.	1,000		
	$24,000		
Other Assets	25,000		
Depr. Fund for Bldg.	1,000		
	$50,000		$50,000

If no depreciation fund is established, the balance sheet stands thus:

Balance Sheet of Company Y, as at......

Building	$25,000	Capital	$50,000
Less: Res. for Depr.	1,000		
	$24,000		
Other Assets	26,000		
	$50,000		$50,000

When a depreciation fund is carried, at expiration of 25 years the depreciation reserve has grown in amount equal to original cost of the building, and replacement is shown by following entries:

Cash	$25,000	
Depreciation Fund for Building		$25,000
For sale of depreciation fund investments.		
Building	$25,000	
Cash		$25,000
For construction of new building.		

Although an equal degree of simplicity is not possible in practice, the principles apply subject to adjustments for salvage, variations from anticipated life of assets, etc.

INTEREST AS A FACTOR.—If interest is added to principal in computing the fund, the computation is more complicated. Suppose Company Y possesses a building the cost of which is $100,000, and estimated life 10 years. A replacement fund is to be established to accumulate at compound interest, 4% being the assumed rate. Applying formula (1), the annual instalment is found thus:

$$x = \$100{,}000 \times \frac{1.04 - 1}{1.04^{10} - 1} = \$8{,}329.09$$

which is carried to the depreciation fund by the same procedure as in preceding illustration. As interest is received on investments in the depreciation fund, it is suitably invested, following entries being necessary to bring the transaction into the books:

Cash	\$......	
Reserve for Depreciation		\$........
Being interest received on depreciation reserve investments.		
Depreciation Fund for Machine	\$......	
Cash		\$........
To record transfer of cash to the special depreciation fund for machine.		

TERMINOLOGY.—Terminology may be altered from that used in the foregoing explanation without changing the principle involved. Thus, in railroad accounting the depreciation reserve is technically known as "Reserve for Accrued Depreciation," and in the balance sheet it is deducted from "Road and Equipment." Under the Uniform System of Accounts for Telephone Companies presented by the Interstate Commerce Commission, "Depreciation of Plant and Equipment" is charged and "Reserve for Accrued Depreciation" credited for amount of depreciation accruing on tangible fixed capital, while in the accounts prescribed by the Interstate Commerce Commission for gas and electric corporations in the District of Columbia, "General Amortization" is charged and "Accrued Amortization of Capital" is the reserve or credit account.

ADVISABILITY OF CREATING FUNDS.—It may not be desirable to accumulate depreciation funds. As a general rule, specific funds are not necessary. The Interstate Commerce Commission rejects the use of depreciation funds for railroad accounting, although it considers them useful under some conditions. Character of plant determines method of financing renewals and replacements. Sometimes, in making extensions to property there is no objection to borrowing money temporarily from the depreciation fund. This should, of course, be returned to the fund when money intended for the extensions is secured.

A STUDY OF BALANCE SHEETS.—Balance sheets in recent reports of large American corporations show great lack of uniformity in management of reserves and funds. A fair proportion show reserves either as liabilities or as deductions from assets. Few indicate special funds, except sinking funds for redemption of bonded indebtedness. U. S. Steel Corp. balance sheet has an account on the asset side entitled "Sinking and Reserve Fund Assets." Philadelphia Rapid Transit Co. balance sheet shows "Reserve Fund for Renewals" on asset side, and on liability side, of equal amount, "Renewal Reserve." Balance sheet of Third Avenue Railway Co. has an account on asset side entitled "Deposit for Depreciation, Renewals, and Contingencies," and on liability side, "Reserve for Depreciation, Renewals, and Contingencies." Pittsburgh Brewing Co. has a "Plant Sinking Fund" among the assets.

Sinking funds receive equally diversified names. International Paper Co.

has "Sinking Fund Accounts"; United Gas Improvement Co., "Sinking Fund Securities"; Interborough Rapid Transit Co., "Sinking Fund on 5 Per Cent, 45-Year Gold Mortgage Bonds"; Bethlehem Steel Corp., "Special Funds in Hands of Trustees for Redemption of Mortgages."

The following companies indicate the depreciation reserve on right-hand side: Philadelphia Rapid Transit Co., Third Avenue Railway Co., Interborough Rapid Transit Co., and Bethlehem Steel Corp.

Sears, Roebuck & Co. and Lehigh Valley Railroad Co. show the reserve as a deduction from assets. Report of Wells, Fargo & Co. as of June 30, 1912, indicates "Reserve for Accrued Depreciation" deducted from property and equipment account, whereas the report for the preceding year lists it on the liability side.

Utah Copper Co. balance sheet shows an account on liability side entitled "Appropriated Surplus—Sinking Fund." Balance sheets of William Cramp & Sons, Baldwin Locomotive Works, International Harvester Co., General Electric Co., and American Tobacco Co., indicate neither reserves nor funds of any kind.

THE PLANT LEDGER.—The setting up of a plant ledger should be preceded by an **analysis of plant** into significant **units.** A unit may be a building, 20 locomotives of the same type, a steamboat, etc. Question is always one of expediency determined upon actual conditions. Following **rules** may be of assistance:

1. A unit of plant cannot be made up of unlike things, or things having different functions.
2. For the sake of the saving in calculations, a unit should include as many items as possible capable of being handled together.
3. A number of things may be handled together as a unit if they have the same general physical makeup, are employed for the same purpose, and, what would be ordinarily inferred from the foregoing, have approximately the same lifetime.

Analysis of plant is illustrated as follows:[6]

Table A. Subdivision of Cost of Industrial Plant

		Proportional Cost %
I. Plant:		
(a) Riparian rights for dam and flowage basin, real estate expenses, organization expenses, preliminary legal expenses, cost of financing, removal of railroads, highways, bridges, and all expenses preliminary to actual construction of work......		20
(b) Permanent construction, dam, power-house, and waterways, etc.		30
(c) Transmission system:		
(1) Right of way..........................	4.5	
(2) Copper..............................	1.5	
(3) All else..............................	7.0	13

[6] The data on hydroelectric plant used in this section are taken from the discussions of Calvert Townley and Dr. Cary T. Hutchinson, before the American Institute of Electrical Engineers, Dec. 1909.

II. Equipment:	
(a) Equipment of power-house	14
III. Capitalized General Expenditures:	
(a) General expense, engineering administration, legal, etc.	11
(b) Interest during construction	12
	100

Of these items, only I(b), I(c), and II(a), comprising 57% of entire cost of the plant, are subject to depreciation; and of item I(b), a large part does not depreciate to any appreciable degree from physical causes, since it covers rock excavation and concrete.

Table A indicates **proportional cost** of the main subdivisions of the plant. Thus, cost of equipment is 14%, and of transmission system 13%, of total cost of plant. Tables B and C indicate what percentage cost of different units of equipment and transmission system is of total cost of equipment and transmission system, respectively.

Analysis of Transmission System.—For illustrative purposes attention will be confined to items I(c) and II(a), since they serve to indicate effects of both functional and physical depreciation. The following table classifies units of transmission system—I(c)—indicating proportional cost of units and lifetime in years. In this connection, by "unit" is meant one, or more than one, item of plant, as already explained.

Table B. Cost and Lifetime of Transmission System

1. Transmission Line

		Proportional Cost %	Life in Years
I-c-1	Right of way	45.0	..
I-c-2	Towers	18.4	15
I-c-3	Special structures	5.1	10
I-c-4	Insulators	2.1	10
I-c-5	Copper	23.7	25
I-c-6	Installation	5.7	..
		100.0	

2. Substations

		Proportional Cost %	Life in Years
I-c-7	Land	6	..
I-c-8	Buildings	30	25
I-c-9	Transformers	40	20
I-c-10	Switches, etc.	16	10
I-c-11	Installation	8	..
		100	

Analysis of Power-House Equipment.—The equipment of power-house is classified in the following table:

Table C. Cost and Lifetime of Power-House Equipment

		Proportional Cost %	Life in Years
II-a-1	Stop logs, gates, and other wood exposed to air and water	0.80	5
II-a-2	Flooring, roofing, hardware, and miscellaneous fixtures	9.80	15
II-a-3	Tile wainscoting, sewage, plumbing system, metal window-frames, etc.	2.45	15
II-a-4	Electric light and telephone	0.80	10
II-a-5	Switchboard equipment	4.35	10
II-a-6	Cables and heavy wiring	3.90	10
II-a-7	Cranes	1.25	15
II-a-8	Water-wheels	33.75	25
II-a-9	Water-wheel governors	2.90	10
II-a-10	Generators and transformers	40.00	25
		100.00	

If cost of entire plant is known, cost of any unit can be derived by finding what percentage the chief subdivision of which the unit forms a part, is of cost of plant, and taking this percentage of entire cost of plant. When value of chief subdivision is thus found, the value of the unit may be determined by finding what percentage the unit is of the chief subdivision.

To illustrate, if cost of entire plant is $100,000, then cost of power-house equipment is 14% of that amount, or $14,000, and cost of any of units composing power-house may be found by multiplying $14,000 by the percentage of cost of equipment represented by it. Thus, cost of water-wheels is .3375 of $14,000, or $4,725. These percentages must, of course, be based upon actual cost of the properties.

Character and Use of Plant Ledger.—The plant ledger should be made an essential part of the double-entry books, and be controlled by a Plant account in the general ledger, with which it must be in agreement. The form and arrangement of the plant ledger should be such as to combine brevity, accuracy, and compactness with necessary detail. It should afford a complete record of the life of each unit or class of units of the plant.[7]

The plant or property ledger must show not only original investment in a unit of plant, but also in all additional units of a like character afterwards purchased. It must show losses sustained each year on all wasting assets and their resultant diminished value. If desirable, the month may be made the time basis for figuring depreciation, but in most cases the yearly basis is sufficiently accurate. The plant ledger should be so arranged that all needed adjustments, either to show effect of functional depreciation, or of unanticipated shortening or lengthening of a unit's life, can be made.

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[7] The Bureau of Internal Revenue prescribes that in charging off depreciation: "The allowances should be computed and charged off with express reference to specific items, units, or groups of property, each item or unit being considered separately or specifically included in a group with others to which the same factors apply. The taxpayer should keep such records as to each item or unit of depreciable property as will permit the ready verification of the factors used in computing the allowance for each year for each item, unit, or group." (Reg. 62, Art. 169.)

A **loose-leaf book** is most suitable for the plant ledger, because it is unnecessary to carry in it more sheets than needed for current work. Form 2 represents a page of the plant ledger. An explanation of the data entered in this form is given below.

In the plant ledger the pages or sheets used for the record of any unit or class of units should be numbered consecutively. Name of the unit appears in upper left-hand corner. Year of installation of a new unit, or of adjustment of an old one, appears in the first column. In case of an old plant it indicates year plant ledger was installed. In next column is entered the estimated life (or remaining life) of unit; and in third column its value at time of installation. In remaining columns annual depreciation allowances are distributed, their total equaling cost or adjusted value of the unit, as given in column three; the element of scrap value not being taken into consideration.

The first distribution column of any particular unit should correspond in date with the year of installation of the property. Approximate accuracy will be secured if for 1st year the distribution allowance be calculated as one-half that of a full year, since installations will be fairly well scattered through it, some going into operation early, others late, in the year.

If a number of items of a class are installed at different times during the year, or if there is uncertainty as to whether installations for the year in any particular class are completed, an auxiliary blank should be used from which at the close of the year a recapitulation can be made and total installation entered in plant ledger. In this way one line serves for each year's installations of any class, and work of computing annual allowances and possible future adjustments is reduced to a minimum.

To illustrate **working of the plant ledger,** take the hydroelectric plant analyzed in the preceding pages, assuming its total investment value to be $100,000, and selecting one of its units. For example, take item 9 of powerhouse equipment, "water-wheel governors," having an estimated life of 10 years, and comprising 2.9% of value of the equipment, or $406. Assuming installation to have been made in 1912, entry for it in the plant ledger is shown in Form 2. As but one-half of a full year's depreciation occurs in year of installation, distribution of depreciation will extend over 11 columns in the ledger, a similar half-year's charge being made in the 11th column, or for 1922.

If no additional installations are made, if functional depreciation does not diminish value more rapidly than physical depreciation, and if our estimate of the unit's lifetime has been correct, or nearly correct, no adjustments will be required except annual deduction of depreciation allowance from balance brought forward from previous year. In such a case the record of this unit, when it has become worn out, appears in Form 2.

Adjustments may be required at times, during lifetime of the unit for either of two reasons: first, obsolescence or inadequacy may so impair functional value of the unit that its investment value drops below what the plant ledger indicates; secondly, with passage of time, it may be found that lifetime of the unit was incorrectly estimated, necessitating distribution of its remaining value on a new basis.

Property Ledger Advocated by U. S. Chamber of Commerce.—Following is an abstract on the use of the property or plant ledger, as advocated by the Fabricated Production Department of the U. S. Chamber of Commerce:

A **proper record of depreciation** requires that specific items and units of property be enumerated and classified by kind, group or department, and that their original cost be ascertained, as well as accumulated depreciation and remaining useful life.

PLANT LEDGER

Sheet No. ______

Unit Name or Number Water wheel Governors.

YEAR OF INSTALLATION OR ADJUSTMENT	ESTIMATE OF LIFE	ORIGINAL VALUE	ANNUAL DEPRECIATION BURDEN 1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
1912	10 years	$406.00	$20.30	40.60	40.60	40.60	40.60	~~40.60~~	~~40.60~~	~~40.60~~	~~40.60~~	~~40.60~~	~~20.30~~				
								27.27	27.27	27.27	27.27	27.27	13.65				
	Scrapped 1922	Summary $406.00 406.00 0.00															
Balance brought forward			$406.00	385.70	345.10	304.50	263.90	150.00	122.73	95.46	68.19	40.92	13.65				
Deduct Depreciation {a. physical			20.30	40.60	40.60	40.60	40.60	27.27	27.27	27.27	27.27	27.27	13.65				
Deduct Depreciation {b. functional			0.00	0.00	0.00	0.00	73.30	0.00	0.00	0.00	0.00	0.00	0.00				
Total			$20.30	40.60	40.60	40.60	113.90	27.27	27.27	27.27	27.27	27.27	13.65				
Depreciated Balance		$406.00	$385.70	345.10	304.50	263.90	150.00	122.73	95.46	68.19	40.92	13.65	0.00				
Add cost of Installation of year following		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Balance forwarded		$406.00	$385.70	345.10	304.50	263.90	150.00	122.73	95.46	68.19	40.92	13.65	0.00				

FORM 2. Plant Ledger showing Distribution of Depreciation

To do this is not easy for an established concern accustomed to taking depreciation on a general grouping of property, such as Buildings or Machinery. For such a concern "the splitting up and allocation of the old capital outlay must be approximate." Such allocation will be greatly assisted by a competently made appraisal.

A **complete record and history of depreciation** as well as of plant and equipment can be secured through the property ledger. This aims to do for plant and equipment what the perpetual inventory record does for stock on hand.

Such a property ledger ties up with the general books of account and supplies detail for total cost of property; depreciation written off in any year; additions, renewals, and disposition of property; amount in depreciation reserves; estimated scrap value; and net remaining sound value of property.

In addition, the property ledger will contain a brief description of all property; where located, plant identification; name of manufacturer and manufacturer's number; from whom and when purchased; total cost, including freight and installation charges; estimated useful life of equipment and rate of depreciation; and it may likewise have a record of repairs, replacement values, and a tabulation of monthly depreciation.

The property ledger can be compiled in **card** or **loose-leaf form.** Each card or sheet ought to last from 20 to 30 years. Practically the same form can be used for departmental and final summaries of plant and depreciation. The complete financial, plant, and performance history of each item of property secured in this way guides future outlays upon plant, helps the accurate determination of loss or gain on specific assets, is of some importance in credit applications, simplifies compiling and checking of tax and annual statements, and is invaluable in event of fire loss. The surprising thing is that there is still a comparatively large number of concerns operating without such a property ledger.

Arrangement of the form of property ledgér as well as its size, etc., depends on ingenuity of the executive or cost accountant designing it, as well as on his sense of what is important information for his particular requirements, industry or plant. It may be desired to compress all the information on a small card, using both sides, or it may be considered wise to keep track of monthly depreciation, the cost of repairs or replacement values. These are details to be adjusted to and by individual needs.

To illustrate (Form 3) the use of the property ledger, it is supposed that a 50 h.p. steam engine is purchased from Evans & Clark for use in the trimming department. SE-T1798 is its plant number, SE—symbol for steam engine, T for trimming department. This plant number appears on name plate of machine where it can be easily seen. If the asset is frequently moved about the plant, it will be given a location number. The manufacturer is the Brighton Engine Co., the manufacturer's number B-93217. Its useful life has been determined at 15 years. Invoice for the engine comes to $2,500, freight charges $15, installation $185, a total cost as of Jan. 1, 1921, of $2,700. Scrap value is computed at $150, leaving a wearing value of $2,550, and an annual depreciation of $170 arrived at by dividing wearing value by useful life of 15 years.

The record of the engine is as follows:

1921. Normal depreciation of $170, no additions, no renewals. At end of year there will be $170 in depreciation reserve and a net remaining value of $2,380. (Wearing value $2,550 less depreciation reserve $170.)

1922. Normal depreciation of $170, no additions, no renewals. At end of year there will be $340 in depreciation reserve and a net remaining value of $2,210.

1923. Normal depreciation of $170, no renewals, an addition in the way of a lubricator, installed Oct. 8, at cost of $150. At end of year there will be $510 in depreciation reserve and a remaining value of $2,190. (Former wearing value of $2,550 has been increased $150 to $2,700, by cost of lubricator; $2,700 less $510 in depreciation reserve, leaves a net wearing value of $2,190.)

1924. Normal depreciation has been increased to $182.50. This is arrived at by dividing new remaining value $2,190 by remaining useful life of 12 years. No additions, no renewals. There is accordingly at end of year $692.50 in depreciation reserve, and a net remaining value of $2,007.50.

1925. Normal depreciation of $182.50. Other things being equal, there would accordingly be $875 in depreciation reserve at end of year, and a net remaining value of $1,825, but on July 12 old piston has been replaced by a new one costing $300. This $300 is charged against accumulated depreciation, reducing that to $575, and increasing remaining value by just that much to $2,125.

ITEM Engine	MANUFACTURER Brighton Engine Co	USEFUL LIFE ~~15 Years~~
DEPT. Trimming	MFRS. NO. B-93217	as of 1/1/26 12 Years
PLANT NO. S.E.-T-1799	PURCHASED FROM Evans and Clark-Order No. 3906	

DATE		DESCRIPTION — REMARKS	REF.	TOTAL COST	SCRAP VALUE	WEARING VALUE	ANNUAL DEPRECIATION	DEPRECIATION RESERVE	REMAINING VALUE
1921 Jan.	1	50 H.P. Engine — Invoice	V.731	2,500 —					
		Freight	V.729	15 —					
		Installation	V.741	185 — (2,700 —)	150 —	2,550 —	170 —	170 —	2,380 —
1922							170 —	340 —	2,210 —
1923							170 —	510 —	2,040 —
Oct.	9	Lubricator installed	V.791	150 — (2850 —)		150 — (2,700 —)			150 —
1924							182 50	692 50	(2,190) 2007 50
1925							182 50	875 00	1825 —
July	12	Piston replaced	V.907					300 —	300 —
1926							177 08	(575 —) 752 08	(2,125 —) 1,947 92
1927 Jan.	10	Engine sold - $2000. loss $97.92							

FORM 3. Form of Plant Ledger suggested by U S Chamber of Commerce

1926. At Jan. 1, 1926, the asset has been in use 5 years. Its remaining useful life will accordingly be 10 years, but the replaced piston, etc., it is assumed, prolongs useful life 2 years, and remaining useful life of asset is correspondingly changed to 12. This remaining useful life, 12 years, divided into remaining value, $2,125, gives a new annual depreciation charge of $177.08. At close of year, depreciation in reserve will amount to $752.08, and remaining value $1,947.92.

1927. On Jan. 10 the machine sold for $2,000. On proper page of journal an entry corresponding to the following will appear:

Cash	$2,000.00	
Reserve for Depreciation	752.08	
Profit and Loss	97.92	
Buildings (or Engine)		$2,850

Sales price, $2,000, plus accumulated depreciation, $752.08, $2,752.08, deducted from total cost $2,850 indicates loss of $97.92 on transaction.

A notation can be written in red ink across face of property ledger page, or items of cost, scrap and wearing value, depreciation reserve and remaining value closed out. At all events, the page will be taken out and filed in rear of ledger.

This hypothetical history is given to show how the property ledger operates and by what manner of contingencies it is affected.

RELATION OF DEPRECIATION TO COST ACCOUNTING.—Substitution of machinery for labor makes depreciation an increasing item of cost of manufacture. Depreciation is an element of overhead or burden, which is consequently increased. The **elements of cost** are:

1. Raw Materials
2. Expense of Manufacture:
   (a) Direct Labor
   (b) Overhead or Burden

The problem is to allocate depreciation to cost of output. When it is neglected it leads to serious consequences, because it is sometimes as much as 10% per annum of entire cost of buildings, machinery, and equipment. All well-organized factories are divided into departments whose functions are determined by a study of the manufacturing process. The department serves as a basis for the allocation of overhead. In so far as possible, all elements of overhead must be compiled on a departmental basis. **Productive departments** work directly on the product manufactured. **Non-productive departments** aid the productive process indirectly by supplying to productive departments materials and services required for their work. Costs which cannot be carried directly to productive departments must be allocated to them on some equitable basis. The following are **suggested bases**:

Account	Basis of Distribution
Insurance—Building	Floor space
Insurance—Merchandise	Value of property
Repairs on Building	Floor space
Depreciation of Building	Floor space
Taxes on Building	Floor space
Light	Candle-power required
Heat	Cubic feet of space
Salaries of General Officers	Net sales
General Administrative Expense	Net sales
Bad Debts	Net sales

Extent to which depreciation charges can be allocated directly depends on extent to which equipment is itemized for depreciation purposes. If depreciation charge for entire plant is calculated on total valuation of plant and equipment, the depreciation burden for departments must be allocated similarly to other general factory costs. It is desirable to segregate machinery and equipment by departments as a first step towards scientific calculation of depreciation costs and their allocation to cost of output. As much as possible of depreciation should be made a **direct departmental expense.** Nicholson suggests application of depreciation charges to departments on basis of total valuation of equipment in cash; but it is necessary to distinguish between property which is strictly departmental and property intended to promote welfare of plant as a whole. **Total overhead** for each productive department consists of: (1) direct departmental overhead, and (2) indirect departmental overhead—which latter consists of: (a) general factory overhead secured when general operating expenses are allocated to all departments productive and non-productive, and (b) costs of operating non-productive departments, which are allocated to productive departments after general operating expenses have been distributed to all departments, as in (a).

OVERTIME AND IDLE TIME.—Overtime causes some increase in the depreciation rate. Idle time may likewise tend to decrease the rate. During the war the Bureau of Aircraft Production prescribed the following yearly rates as a basis for monthly payments on a cost-plus basis to contractors operating two or more shifts per day:

	1 Shift %	2 Shifts %	3 Shifts %
Main buildings, brick and concrete	2½	3	4
Substantial wooden buildings	5	6	7
Factory equipment	10	12½	15
Electric equipment	12½	15	18
Heating and melting furnaces	6	8	9
Machinery	7½	10	12
Furniture and fixtures	10	12½	15

Rates in first column are for an 8-hour day. Rates for overtime were based on abnormal war conditions. Overtime affords less opportunity than usual for repairs and replacement. When there are two or more shifts, machines operate under different individuals. Each leaves minor matters of adjustment to his successor. Night-work is harder on machines than day-work. Taking on new labor dilutes labor efficiency. A constantly driven machine is affected by "mechanical fatigue."

The following table expresses the view of the auditor of a large American steel company. It is based on a normal day of 8 hours.

8	hours	—normal depreciation	
9	"	5%	of normal depreciation, additional
10	"	10%	" " " "
11	"	15%	" " " "
12	"	20%	" " " "
13	"	25%	" " " "
14	"	30%	" " " "
15	"	40%	" " " "
16	"	50%	" " " "
17	"	60%	" " " "

18 hours	70%	of normal	depreciation,	additional
19 "	80%	"	"	"	"
20 "	90%	"	"	"	"
21 "	100%	"	"	"	"
22 "	115%	"	"	"	"
23 "	130%	"	"	"	"
24 "	150%	"	"	"	"

The following **qualifying remarks** are made by the advocate of the above rates:

We feel that in fairness to all, after a normal rate of depreciation has been established the allowance for overtime depreciation should exclude the element of obsolescence. This would mean that the allowance for overtime depreciation *up to a certain point* would not increase in the same ratio as the number of hours. In other words, we consider that the factor of obsolescence would be constant, and the only varying element would be the actual depreciation due to wear and tear. The "certain point" referred to above should be 16 hours. After this point, we consider depreciation takes place very rapidly and we feel that in the above table the conditions are truly presented.

We think, furthermore, that it would be an injustice not to consider that the auxiliary departments of a plant should be subject to overtime depreciation. By this is meant such departments as steam, power, water, transportation, etc. Obviously, a "speed-up" program is felt in every department in the plant. It is conceded that these departments do ordinarily work 24 hours a day, but it is only in a measure. Under normal conditions they are working at full capacity only a fractional part of a day, and it was on this basis that normal depreciation was figured. If, however, it is required that these plants be run at full capacity for a greater than their normal time, it cannot be denied that there is additional depreciation.

We feel that the application of overtime depreciation will necessitate the determination of normal depreciation for each department in the plant. Furthermore, the determination of the number of hours a department is working overtime, unless treated in a broad way, might resolve itself into a complicated problem. Not knowing the attitude that will be taken in this respect, we hesitate in offering any suggestions.

Nicholson suggests the following rates:

11 hours—add	5%	of	the	normal	rate
12 " "	10%	"	"	"	"
13 " "	15%	"	"	"	"
14 " "	20%	"	"	"	"
15 " "	25%	"	"	"	"
16 " "	30%	"	"	"	"
17 " "	35%	"	"	"	"
18 " "	40%	"	"	"	"
19 " "	45%	"	"	"	"
20 " "	50%	"	"	"	"
21 " "	57½%	"	"	"	"
22 " "	67½%	"	"	"	"
23 " "	80%	"	"	"	"
24 " "	95%	"	"	"	"

ALLOCATION OF DEPRECIATION ILLUSTRATED.—Assume that a factory consists of four departments, A, B, C, and D. General plant depreciation applicable to the manufacturing process is $2,000 monthly. In addition, depreciation costs which can be determined on a departmental basis are as follows per month:

Department A	$500
Department B	800
Department C	350
Department D	600

These figures are found by proper computations based on data presented in the plant ledger.

It is necessary to fix upon some plan of allocating general factory depreciation to departments. If allocation is to be made on basis of floor space, we may assume that the floor space for the departments is:

	Sq. ft.
Department A	20,000
Department B	40,000
Department C	15,000
Department D	25,000
	100,000

The amounts chargeable to departments are as follows:

Department A, 20% of $2,000, or	$ 400
Department B, 40% of 2,000, or	800
Department C, 15% of 2,000, or	300
Department D, 25% of 2,000, or	500
	$2,000

The total depreciation cost per month for each department is, therefore as follows:

	Departmental		General	Total
Department A	$ 500	plus	$ 400	$ 900
Department B	800	"	800	1,600
Department C	350	"	300	650
Department D	600	"	500	1,100
	$2,250		$2,000	$4,250

Each manufacturing department is thus charged with its total depreciation burden and must make the proper distribution to its orders in process during the given month. In the financial records this depreciation expense represents a charge to Manufacturing and a credit to the Depreciation Reserve account, as follows:

Manufacturing	$4,250	
Reserve for Depreciation		$4,250
To represent the month's depreciation cost chargeable to goods manufactured as one of the costs of manufacture.		

The Manufacturing account controls the cost ledger, so that the same amount is distributed over the order numbers whose records are shown in the cost ledger. It may be that the depreciation cost will not appear as a separate item on the cost sheets because it may be merged with other items of indirect cost, the total being shown in the form of a machine rate, or as a percentage of prime cost.

The manner in which each department makes the distribution of its quota of depreciation expense to jobs or order numbers depends upon the method of allocation of burden or overhead employed. If the **machine rate method** is in use the depreciation expense is combined with other indirect applicable to the department and the total indirect is allocated to machines or production centers and serves as the basis for the determination of a machine-hour rate which will be sufficient to exhaust the total month's overhead applicable to such machine or production center in a month's time.

To illustrate, assume that the total number of machine hours for a given machine, running full time, is 360 for a given month, and that the total indirect applicable to that machine is estimated to be \$720 for that month. Its rate per hour is, therefore, \$720 ÷ 360, or \$2. But if idle time for the month for this machine amounts to 60 hours, the unapplied portion of the estimated burden will amount to \$2 × 60, or \$120. Further, let us assume that in due time the actual indirect for this month is ascertained to be \$780, or \$60 in excess of the estimated indirect. To simplify matters for illustrative purposes, assume further that the machine's time during the month has been occupied exclusively upon four order numbers. Below is shown the appearance of the account for indirect and also the cost ledger accounts for the four orders, after the indirect has been distributed, first by the direct rate, secondly, by the first supplementary rate, and, thirdly, by the second supplementary rate:

General Ledger

Indirect, Dept. A

Actual Indirect	\$780	Direct Rate	\$600
		1st Supplementary	120
		2nd Supplementary	60
	\$780		\$780

Cost Ledger

Order No. 230 (70 hrs.)

Direct Rate	\$140		
1st Supplementary	28		
2nd Supplementary	14		

Order No. 231 (100 hrs.)

Direct Rate	\$200		
1st Supplementary	40		
2nd Supplementary	20		

ORDER NO. 232 (70 HRS.)

Direct Rate	$140
1st Supplementary	28
2nd Supplementary	14

ORDER NO. 233 (60 HRS.)

Direct Rate	$120
1st Supplementary	24
2nd Supplementary	12

The hours indicated within the parentheses are the actual number of hours spent by the machine on the different orders. The "direct rate" charge is made on the supposition that the machine operates full time. The "1st supplementary" charge distributes the balance of estimated indirect resulting from idle time. The "2nd supplementary" charge distributes the excess of the actual over the estimated indirect. The "1st supplementary" rate is secured by dividing the unapplied burden resulting from idle time, $120, by the number of operating machine hours for the month, 300, which gives, as the first supplementary rate per hour, $0.40. The "2nd supplementary" rate is secured by dividing the excess of the actual indirect over the estimated indirect, $60, by the number of operating machine hours for the month, 300, which gives as the second supplementary rate per hour, $0.20. The various distributions are shown in the above accounts.

The amounts credited to the accounts for departmental indirect, in the general ledger, are in turn charged to Manufacturing account, which may also be a departmental account in the general ledger.

Methods of Depreciation

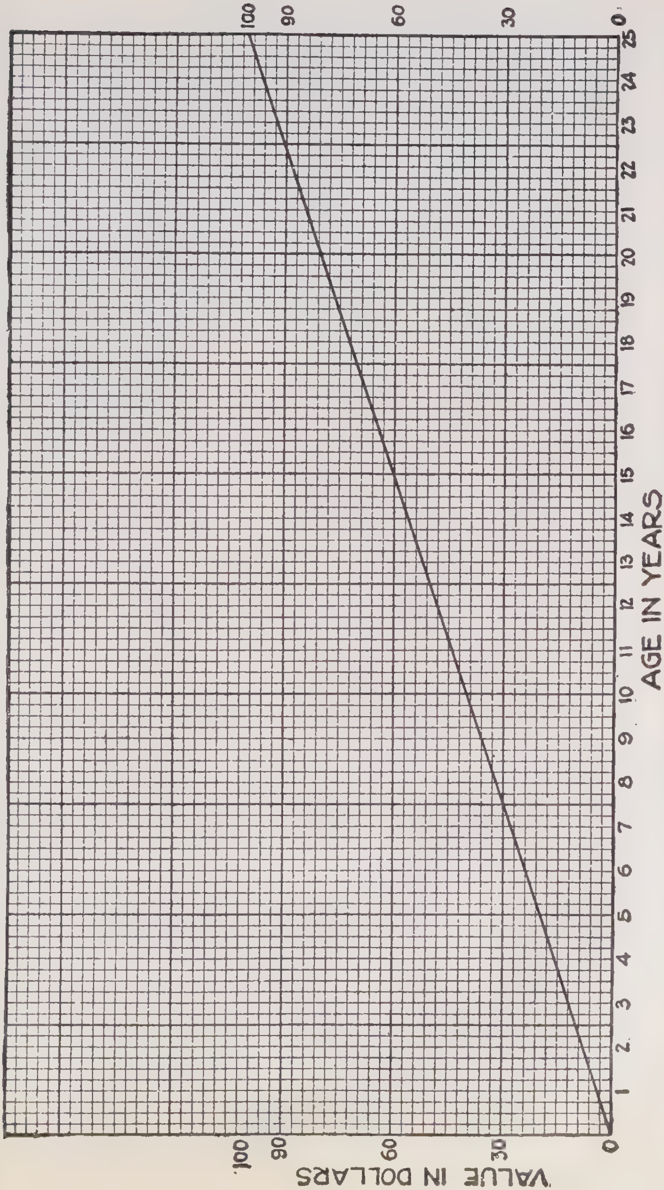
STRAIGHT-LINE METHOD.—This is the simplest and most widely employed. It does not require any complicated mathematical computations. If V represents the investment, n lifetime in periods, and V' salvage value, then x the periodic charge is:

$$x = \frac{V - V'}{n}$$

Assume case of a plant costing $100 with a life of 25 years and a salvage value of zero.

$$x = \frac{\$100}{25} = \$4$$

Table 1 shows the accumulations of the charges made on this basis; also reduced theoretical value of remaining investment at end of each year. These results are shown plotted on Form 4.



Form 4. Graphic Illustration of Depreciation—Straight-Line Method
(Plotted from data in Table 1.)

Table 1. Straight-Line Method

TABLE OF COMPUTATIONS

Age in Years	Value at End of Each Year	Depreciation During Year	Total Accrued Depreciation at End of Each Year
0	$100		
1	96	$4	$ 4
2	92	4	8
3	88	4	12
4	84	4	16
5	80	4	20
6	76	4	24
7	72	4	28
8	68	4	32
9	64	4	36
10	60	4	40
11	56	4	44
12	52	4	48
13	48	4	52
14	44	4	56
15	40	4	60
16	36	4	64
17	32	4	68
18	28	4	72
19	24	4	76
20	20	4	80
21	16	4	84
22	12	4	88
23	8	4	92
24	4	4	96
25	0	4	100
		$100	

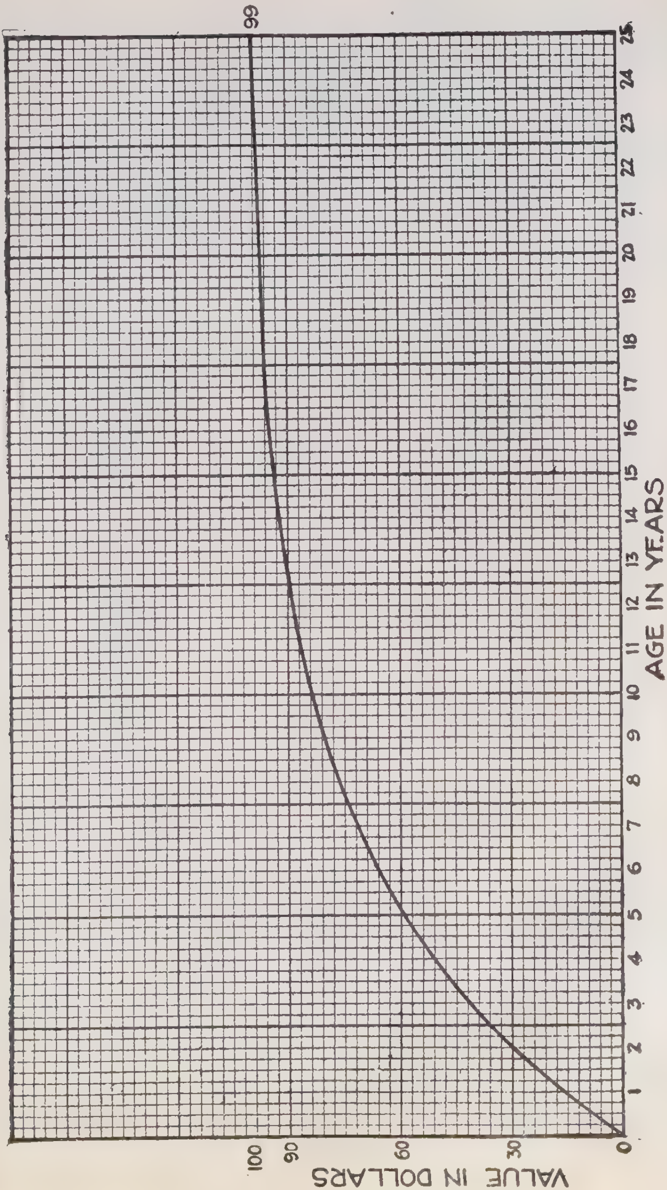
REDUCING BALANCE METHOD.—This method requires heavy charges during early years of a unit's lifetime, which continually decrease in amount from year to year. Since repairs and renewals cost least during early years, they offset to some extent this inequality and tend to make total cost of upkeep and depreciation somewhat uniform.

A **constant percentage** on the decreasing balance is charged off, beginning with the original investment and reducing it to zero. If V' represents salvage, V original investment, n the number of periods, and x the constant percentage of the balance necessary to reduce it to the required minimum or salvage in the given time, then:

$$x = 1 - \sqrt[n]{\frac{V'}{V}}$$

An asset costs $100 and depreciates in 25 years to $1. Applying the formula,

$$x = 1 - \sqrt[25]{\frac{1}{100}} = .168236$$



FORM 5. Reducing Balance Curve
(Plotted from data in first and last columns of Table 2.)

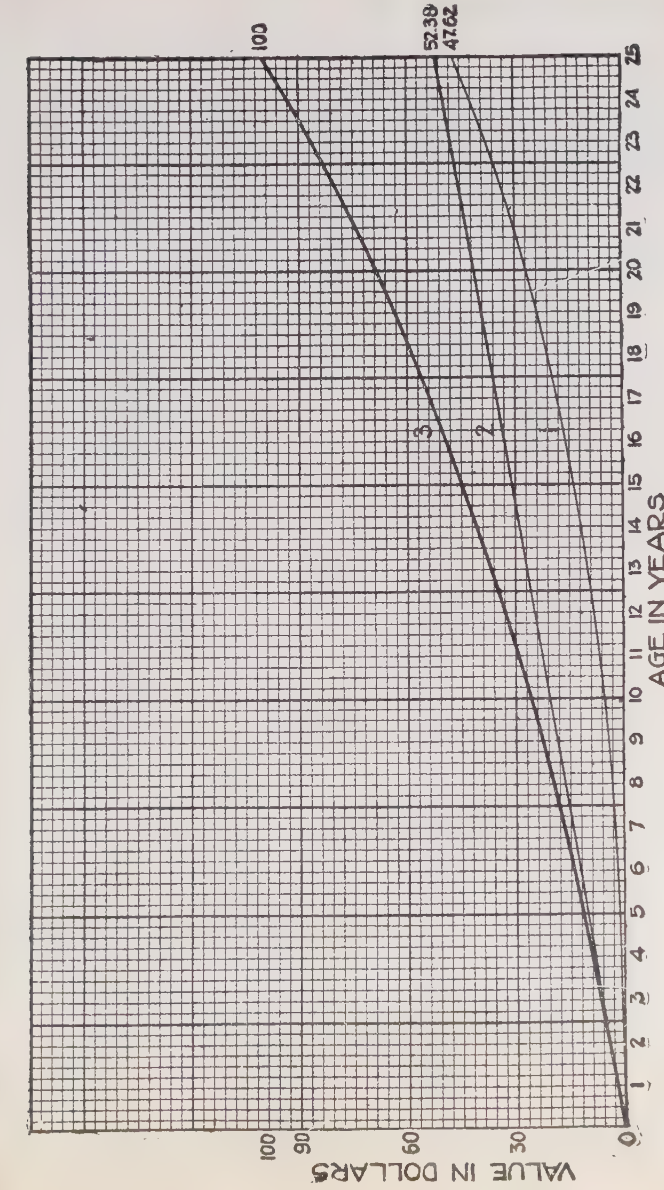
The balance must be reduced each year 16.8236%. Table 2 shows the tabulation of items over the 25-year period. These results are shown plotted in Form 5.

Table 2. Reducing Balance Method

TABLE OF COMPUTATIONS

Age in Years	The Reduced Balance	Depreciation for Each Year	Amount of Depreciation from Beginning to End of Each Year
0	$100.0000	$16.8236	$16.8236
1	83.1764	13.9933	30.8169
2	69.1831	11.6390	42.4559
3	57.5441	9.6810	52.1369
4	47.8631	8.0523	60.1892
5	39.8108	6.6978	66.8870
6	33.1130	5.5708	72.4578
7	27.5422	4.6136	77.0714
8	22.9286	3.8574	80.9288
9	19.0712	3.2086	84.1374
10	15.8626	2.6687	86.8061
11	13.1939	2.2197	89.0258
12	10.9742	1.8462	90.8720
13	9.1280	1.5365	92.4085
14	7.5915	1.2772	93.6857
15	6.3143	1.0623	94.7480
16	5.2530	.8835	95.6315
17	4.3685	.7349	96.3664
18	3.6336	.6113	96.9777
19	3.0223	.5084	97.4861
20	2.5139	.4229	97.9090
21	2.0910	.3498	98.2588
22	1.7412	.2929	98.5517
23	1.4483	.2437	98.7954
24	1.2046	.2028	98.9982
25	1.0018		
		$99.0000	

SINKING FUND METHOD.—This method employs the principles ordinarily used in establishment of sinking funds. The rate of depreciation is made a **function of an interest rate** and is purely theoretical. A fixed sum of money is set aside each period to accumulate at compound interest. Amounts thus set aside plus interest accumulations should equal the desired amount at end of life of asset in question. Although annual charges remain constant, actual burden increases each period, because in addition to equal amounts placed in fund periodically, there are constantly increasing interest accumulations. These represent the earning capacity of the fund and are not received through the usual channels of revenue as would happen were they reinvested in the business. If V equals fund to be accumulated in n



FORM 6. Sinking Fund Curves
(Plotted from data in Table 3.)

periods by investing x dollars, in a fund to accumulate at r rate of interest, then:

$$x = \frac{V(r-1)}{r^n - 1}$$

Assume case of a plant valued at \$100, life 25 years, salvage zero. A sum of money is to be set aside each year so that in 25 years the fund will accumulate to \$100 at 5%, compounded annually.

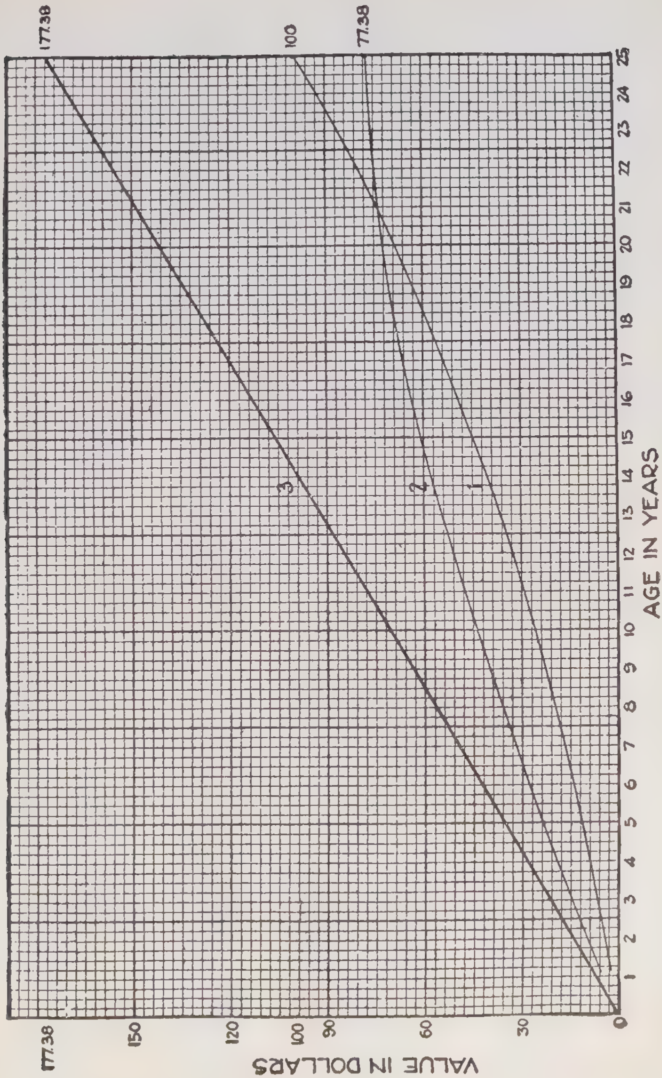
$$x = \frac{\$100(1.05 - 1)}{1.05^{25} - 1} = \$2.0952+$$

Table 3 shows these results tabulated. The data are plotted in Form 6.

Table 3. Sinking Fund Method

TABLE OF COMPUTATIONS

Age in Years	Value at End of Year	Annual Payment to Sinking Fund	Annual Accretion of Interest in Sinking Fund	Actual Annual Cost, or Payment, Plus Year's Interest Accumulations
0	\$100.0000			
1	97.9048	\$2.0952	\$0.0000	\$2.0952
2	95.7074	2.0952	.1049	2.2001
3	93.3947	2.0952	.2148	2.3100
4	90.9693	2.0952	.3302	2.4254
5	88.4225	2.0952	.4516	2.5468
6	85.7483	2.0952	.5790	2.6742
7	82.9405	2.0952	.7126	2.8078
8	79.9923	2.0952	.8530	2.9482
9	76.9866	2.0952	1.0005	3.0957
10	73.6462	2.0952	1.1552	3.2504
11	70.2333	2.0952	1.3177	3.4129
12	66.6497	2.0952	1.4884	3.5836
13	62.8870	2.0952	1.6675	3.7627
14	58.9361	2.0952	1.8557	3.9509
15	54.7876	2.0952	2.0533	4.1485
16	50.4317	2.0952	2.2607	4.3559
17	45.8581	2.0952	2.4784	4.5736
18	41.0557	2.0952	2.7072	4.8024
19	36.0133	2.0952	2.9472	5.0424
20	30.7187	2.0952	3.1994	5.2946
21	25.1594	2.0952	3.4641	5.5593
22	19.3221	2.0952	3.7421	5.8373
23	13.1930	2.0952	4.0339	6.1291
24	6.7574	2.0952	4.3404	6.4356
25	0.0000	2.0952	4.6622	6.7574
		\$52.3800	\$47.6200	\$100.0000



Form 7. Annuity Curves
(Plotted from data in Table 4.)

ANNUITY METHOD.—Under this method an allowance is made for interest on the investment remaining at the beginning of each period. It proceeds on the assumption that interest on the remaining investment should be allowed for in the revenues; also that annual allowances should be equal. The **equal annual charge** is determined without assumption of a depreciation rate, by finding such a sum as, when deducted each year from sum of remaining investment and interest thereon at a given rate, will write down the investment to salvage, or zero, and also return full amount of interest on investment as it stands from beginning to end of the plant's life. Interest for first year is on original investment; for second year, on original investment reduced by the amount that total annual allowance for interest and depreciation is in excess of interest on investment for first year. That part of the allowance covering item of interest gradually diminishes. That part covering depreciation correspondingly increases. The two combined are always the same. The **controlling factor** is the rate of interest on the investment. As the rate is lowered, this method approaches the straight-line method, being identical with it when interest is zero.

Table 4. Annuity Method

TABLE OF COMPUTATIONS

Age in Years	Value at End of Year	Interest on Remaining Value of Property at 5%	Combined Depreciation Allowance	Depreciation Plus Interest on Investment
0	$100.0000			
1	97.9048	$ 5.0000	$ 2.0952	$ 7.0952
2	95.7047	4.8952	2.2001	7.0952
3	93.3947	4.7852	2.3100	7.0952
4	90.9693	4.6697	2.4254	7.0952
5	88.4225	4.5484	2.5468	7.0952
6	85.7483	4.4211	2.6742	7.0952
7	82.9405	4.2874	2.8078	7.0952
8	79.9923	4.1470	2.9482	7.0952
9	76.8966	3.9996	3.0957	7.0952
10	73.6462	3.8448	3.2504	7.0952
11	70.2333	3.6823	3.4129	7.0952
12	66.6497	3.5116	3.5836	7.0952
13	62.6462	3.3325	3.7627	7.0952
14	58.9361	3.1443	3.9509	7.0952
15	54.7876	2.9468	4.1485	7.0952
16	50.4317	2.7394	4.3559	7.0952
17	45.8581	2.5216	4.5736	7.0952
18	41.0557	2.2929	4.8024	7.0952
19	36.0133	2.0528	5.0424	7.0952
20	30.7187	1.8006	5.2946	7.0952
21	25.1594	1.5359	5.5593	7.0952
22	19.3221	1.2580	5.8373	7.0952
23	13.1930	.9661	6.1291	7.0952
24	6.7574	.6596	6.4356	7.0952
25	0.0000	.3379	6.7574	7.0952
		$77.3800	$100.0000	$177.3800

Let V be original value, V' salvage value, n life of plant, and r rate of interest plus 1; then x, the equal annual allowance necessary to afford a return of the given per cent and reduce the investment to zero at end of n years, is:

$$x=\frac{(Vr^n-V')(r-1)}{r^n-1}$$

Assume a unit costing \$100, life 25 years, also that investment at beginning of each year should have a return of 5% thereon.

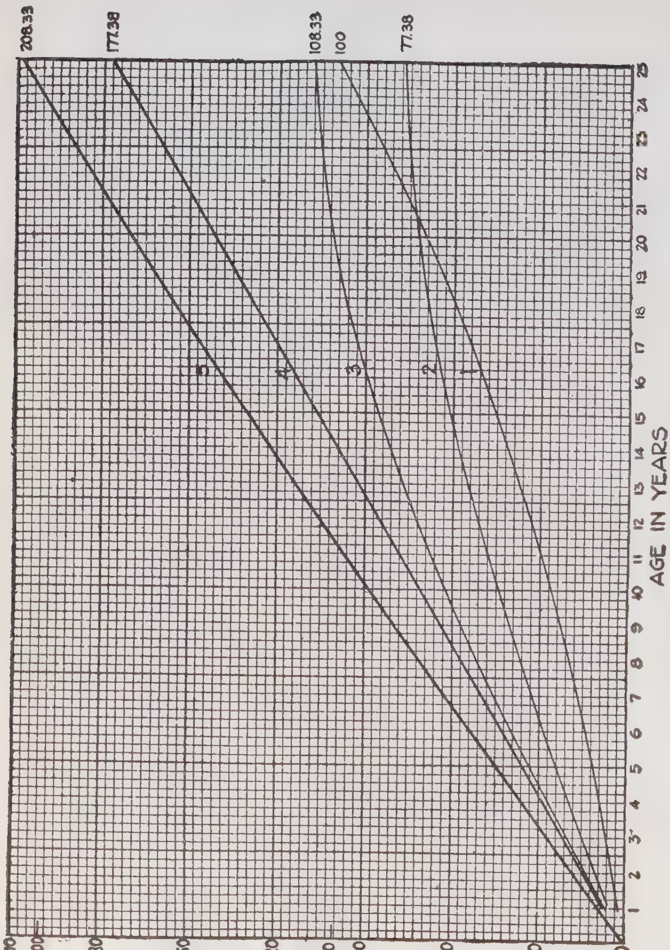
$$x=\frac{(100\times 1.05^{25})(1.05-1)}{1.05^{25}-1}=\$7.095245+$$

The details for the full 25 years period are tabulated in Table 4. This data is plotted in Form 7.

EQUAL ANNUAL PAYMENT METHOD.—This method, suggested by the Special Committee on Valuation of the American Society of Civil Engineers, was devised to secure an **equalized depreciation charge** and thus a **uniform investment cost.** By investment cost is meant that part of the cost of output which arises from investment in plant. It depends on amount of capital invested and rapidity of its exhaustion. If at end of each year a portion of investment is returned, as it should be under a proper system of charging for depreciation of capital outlay, interest charge on remaining investment decreases each year in proportion to amount of investment so amortized.

Assume a property costing \$100, life 25 years. Money invested in it is borrowed at 5%. What is to be determined is the equal annual investment cost, and therefore depreciation charges to cover such cost, so that out of such charges investment can be amortized and interest at 5% paid on the reducing investment. The sum which must be placed in a sinking fund each year so that the annual payments plus accumulations at 5% compound interest will amount to \$100 in 25 years is, according to the sinking fund formula, \$2.0952+. By the equal annual payment method, instead of establishing a sinking fund, each annual depreciation charge is made equal to what the annual payment to a sinking fund plus the interest accumulations for that year would have amounted to had such a fund been established. In the third column of Table 5, depreciation for each year is assumed to be equal to annual increase of a sinking fund into which annual payments of \$2.0952+ are made and allowed to accumulate at 5%, thus amounting to \$100 at end of 25 years. These amounts, when deducted from amount invested as at beginning of each year, give remaining investment upon which interest for next year is computed. Return on remaining investment as at beginning of each year is shown in fourth column at 5%, and in fifth column at 7%. Sixth and seventh columns show depreciation and interest on remaining investment combined.

The data given in Table 5 are plotted in Form 8.



FORM 8. Curves illustrating Equal Annual Payment Method
(Plotted from data in Table 5.)

Table 5. Equal Annual Payment Method

TABLE OF COMPUTATIONS

Age in Years	Value at End of Year	Depreciation During Year	Return on Remaining Value of Property at: 5%	7%	Combined Depreciation and Return Upon Investment at: 5%	7%
0	$100.0000					
1	97.9048	$ 2.0952	$ 5.0000	$ 7.0000	$ 7.0952	$ 9.0952
2	95.7047	2.2001	4.8952	6.8533	7.0953	9.0534
3	93.3947	2.3100	4.7852	6.6993	7.0952	9.0093
4	90.9693	2.4254	4.6697	6.5376	7.0951	8.9630
5	88.4225	2.5468	4.5484	6.3679	7.0953	8.9146
6	85.7483	2.6742	4.4211	6.1896	7.0953	8.8638
7	82.9405	2.8078	4.2874	6.0024	7.0952	8.8102
8	79.9923	2.9482	4.1470	5.8058	7.0952	8.7540
9	76.8966	3.0957	3.9996	5.5995	7.0953	8.6952
10	73.6462	3.2504	3.8448	5.3828	7.0952	8.6332
11	70.2333	3.4129	3.6823	5.1552	7.0952	8.5681
12	66.6497	3.5836	3.5116	4.9163	7.0952	8.4999
13	62.8870	3.7627	3.3325	4.6655	7.0952	8.4282
14	58.9361	3.9509	3.1442	4.4021	7.0952	8.3530
15	54.7876	4.1485	2.9468	4.1255	7.0953	8.2740
16	50.4317	4.3559	2.7394	3.8351	7.0953	8.1910
17	45.8581	4.5736	2.5216	3.5302	7.0952	8.1038
18	41.0557	4.8024	2.2929	3.2101	7.0953	8.0125
19	36.0133	5.0424	2.0528	2.8739	7.0952	7.9163
20	30.7187	5.2946	1.8006	2.5209	7.0952	7.8155
21	25.1594	5.5593	1.5359	2.1503	7.0952	7.7096
22	19.3221	5.8373	1.2580	1.7612	7.0953	7.5985
23	13.1930	6.1291	.9661	1.3525	7.0952	7.4816
24	6.7574	6.4356	.6596	.9235	7.0952	7.3591
25	0.0000	6.7574	.3379	.4730	7.0953	7.2304
		$100.0000	$77.3800	$108.3300	$177.3800	$208.3300

PRODUCTION METHOD.—Varying productivity in recent years has given rise to a demand for a method of charging depreciation to operations which will increase it with increased production, and decrease it with decreased production. The Treasury recognizes the propriety of a depreciation charge made to fluctuate in harmony with fluctuations in production. Certain difficulties stand in the way of practical application of the plan. The **rate** cannot be determined on a **strictly mathematical basis.** An additional element of uncertainty is introduced; yet it reduces somewhat the burden during periods of business depression. Also, some forms of depreciation accrue at a rate which is little affected by production. It is probably correct to say that depreciation costs decrease and increase as production decreases and increases, but not in the same ratio. In other words, percentage of fluctuation of true depreciation cost from normal is not as great as are fluctuations of production from normal or average production. Hence, **periods of subnormal production** should be burdened with a depreciation charge smaller in total but larger

per unit of output than that charged in periods of normal production; while reverse is true for **periods of excessive production.**

The production method is better adapted to certain classes of assets than to others. Automobile trucks, delivery wagons, etc., can be depreciated on a per mile-run basis. One company calculates depreciation on Ford automobiles used by salemen at 2 cents per mile. It has found that for 30 cars depreciation has averaged 1.9 cents per mile per car.

Certain assets do not depreciate in harmony with amount of output. Thus it appears that good-will depreciates more rapidly in periods of depression, and vice versa. Certain kinds of furnaces depreciate less rapidly if kept heated constantly than if allowed to cool each day.

Depreciation and the Income Tax

INCOME DEFINED.—Weston defines income as "increase in wealth in addition to that which is already possessed." This is the **net profits concept** of income. In *People* v. *Niagara County Surveyors*,[8] the court said that, although "profit" and "income" are sometimes employed synonymously, strictly speaking income is "that which comes in or is received from any business or investment of capital without reference to the outgoing expenditures," but that profit is "gain which is made upon any business or investment when both receipts and payments are taken into account."

CAPITAL INCREMENT AS INCOME.—The question as to whether capital increment is income came before the U. S. Supreme Court in *Gray* v. *Darlington*,[9] which case arose under the income tax law of 1867, which levied a tax on "gains, profits, and income" of persons as well as of businesses, trades, and professions. The Supreme Court said: "Mere advance in value in no sense constitutes the gains, profits, or income specified by the statute. It constitutes and can be treated merely as increase of capital." **Specific question at issue** was whether advance in value of bonds, during 4 years, over cost was, when realized by sale, income as intended in the law and therefore subject to taxation as profits of the year in which sold. The court said: "The answer which should be given to this question does not, in our judgment, admit of any doubt. The advance in the value of property during a series of years can, in no just sense, be considered the gains, profits, or income of any one particular year of the series, although the entire amount of the advance be at one time turned into money by a sale of the property. The statute looks, with some exceptions, for subjects of taxation only to annual gains, profits and income."

The **Sixteenth Amendment** gave Congress power to "lay and collect taxes on 'incomes.'" It is probable that the word "income" was meant to bear the interpretation given it in *Gray* v. *Darlington*. This interpretation has the support of many cases dealing with interests of life-tenant and remainderman, in which it has become customary to regard increments derived from sale of capital assets held in trust not as income but as principal, which passes to the remainderman. In *Brewster* v. *Walsh*, the District Court of the U. S., District of Connecticut, held the same view, saying that "there is no income from the sale of investments." On Mar. 28, 1921, the U. S. Supreme Court reversed its decision in *Gray* v. *Darlington*, asserting that any increase in value of capital assets, when realized, is income, and as such taxable under

[8] 4 Hill (N. Y.) 20.]
[9] 15 Wall. 63.

the income tax law. The test case involved the estate of Arthur Ryerson, who left, as a part of his estate, capital stock in firm of J. T. Ryerson & Son, valued at $560,000 as of Mar. 1, 1913. In 1917 this stock was sold for $1,280,000, cash received becoming a part of the estate. A tax of $311,000 was collected on this increase and suit was brought for recovery. The Supreme Court declared this to be income, and relied for authority chiefly on its recent decisions: in *Stratton's Independence* v. *Howbert*, in which income was defined as "gain derived from capital, from labor, or from both combined"; in *Eisner* v. *Macomber*, in which income was defined as "gain derived from capital, from labor, or from both combined" provided it be understood to include profit gained through sale or conversion of capital assets; and in *Hays* v. *Gauley Mountain Coal Co.*, in which the court drew an important distinction between the wording of the act of 1867 and that of 1909.

INCOME CONCEPT IN LEGISLATION.—By act of Aug. 5, 1861, Congress provided for a 3% tax on excess over $800 of the "annual income of every person residing in the United States or elsewhere or from any source whatever." This law was never put into effect. **In 1862** a tax of 3% was levied on "annual gains, profit or incomes of any person residing in the United States, whether derived from any kind of property, rents, interest, dividends, salaries or from any profession, trade, employment or vocation carried on in the United States or elsewhere, or from any source whatever," to the extent that the income exceeded $600. If the income exceeded $10,000, the rate was 5%.

The **income tax law of 1894,** intended to become effective Jan. 1, 1895, was levied on "gains, profits and income derived from any kind of property, rents, interest, dividends, or salaries, or from any profession, trade, employment or vocation." According to the section of the law explaining income, necessary expenses actually incurred in carrying on an occupation were deductible, also interest on indebtedness, losses actually sustained, and worthless debts. The law provided that profits derived from sale of real estate were to be considered income only in case real estate had been purchased within 2 years previously. The **law of 1862** taxed such profits irrespective of time of purchase. The **law of 1864** made them income only when the real estate had been bought in same year as sold, but this was placed at 2 years in 1867. This was a crude attempt to distinguish between capital profits and trading profits.

The **income tax law of 1913** provides that net income shall include "gains, profits, and incomes derived from salaries, wages, or compensation for personal services of whatever kind, and in whatever form paid; or from professions, vocations, businesses, trade, commerce, or sales or dealings in property, whether real or personal, growing out of the ownership or use of or interest in real or personal property; also from interest, rents, dividends, securities, or the transaction of any lawful business carried on for gain or profit, or gains or profits and income derived from any source whatever, including the income from, but not the value of property acquired by gift, bequest, devise, or descent."

This law adopts the concept of income as being a **regular periodic return** because it specifically excludes windfall accretions to surplus. It was the intention of Congress that the unearned increment should not be regarded as income but as accretion to capital. The law provided for deducting "necessary business expenses, interest on personal indebtedness, losses actually sustained during the year, including worthless debts charged off, and a reasonable allowance for exhaustion, wear and tear of the property arising

out of its use in the business (not exceeding in the case of mines 5 per cent of the gross value of the year's output at the mines)."

The **law of 1916,** in defining net income, employed nearly the same words as are found in the 1913 law quoted above, merely changing the phrase "any lawful business" to "any business," but whereas the 1913 law exempted acquisitions of property acquired by gift, bequest, devise, or descent, this exemption is not mentioned in the 1916 law, while specific provision is made in latter for inclusion of income from stock dividends.

The **law of 1918** defined net income by first listing the items composing gross income and listing those composing the allowable deductions, gross income less deductions being net income. Gross income was made sufficiently comprehensive to include all possible sources of revenue, while specific items were excluded as not constituting income and consequently were non-taxable. Among these were proceeds of life insurance companies, the value of property acquired by gift or devise, and income from certain tax-exempt securities. In case of non-resident aliens, gross income was made to include only gross income derived from sources within the United States.[10] The definitions of gross income in case of individuals and in case of corporations did not differ in essentials, the definition of gross income for individuals being made to apply to corporations with certain specified exceptions applicable to life insurance companies and mutual marine insurance companies but which are of no interest in so far as general principles are concerned.

To arrive at net income, the following **deductions** from the amount of gross income as limited by the law, were allowed:

1. All ordinary and necessary expenses **paid or incurred** during the taxable year in carrying on any trade or business, including a reasonable allowance for salaries and rentals.
2. Interest **paid or accrued** within the taxable year on indebtedness incurred in the purchase of certain securities the interest upon which is exempt from taxation under the law.
3. Taxes **paid or accrued** within the taxable year.
4. Losses **sustained** during the taxable year and not compensated for by insurance or otherwise, if incurred in trade or business, or if **incurred** in any transaction entered into for profit, although not connected with his trade or business.
5. Losses **sustained** during the taxable year on property not connected with the trade or business if arising from fires, storms, shipwreck, or other casualty, or from theft, when not compensated by insurance or otherwise.
6. Debts **ascertained to be worthless and charged off** within the taxable year.
7. A reasonable allowance for the exhaustion, wear and tear of property used in the trade or business, including a reasonable allowance for obsolescence.
8. A reasonable deduction for the **amortization** of the cost of buildings and other facilities constructed, erected, installed, or acquired, on or after Apr. 6, 1917, for the production of articles contributing to the war, and for the **amortization** of the cost of vessels constructed or acquired on or after Apr. 6, 1917, for the transportation of articles or men contributing to the prosecution of the war.
9. In case of mines, oil and gas wells, other natural deposits, and

[10] Section 213 for individuals; Section 233 for corporations.

timber, a **reasonable allowance for depletion and for depreciation of improvements.**

10. Contributions or gifts made for charitable, religious, scientific, and educational purposes, not in excess of 15% of the taxpayer's net income when computed without the benefit of this deduction.

11. Provision was made for filing claims in abatement based on substantial losses, incident to the year 1918, "resulting from any **material reduction** (not due to temporary fluctuations) **of the value of the inventory** for such taxable year, or from the actual payment after the close of such taxable year of rebates in pursuance of contracts entered into during such year upon sales made during such year." The law further provided that in case no such claim was filed but it could be shown that during the taxable year 1919 a substantial loss of this character had been sustained the amount of such loss could be deducted from the net income for the taxable year 1918, thus necessitating a redetermination of the taxes for that year.

The **law of 1921** continues the policy previously developed. It also provides that a reasonable addition to a reserve for bad debts shall be a deductible item.

In England income was and is used, with reference to income taxation, in the sense of "annual income."

DEPRECIATION POLICY OF TREASURY.—As interpreted by the Treasury Department for income tax purposes, **depreciation** excludes the idea of reduction in market value due to changing commercial conditions. Moreover, the amount allowable on the grounds of exhaustion, wear and tear, or obsolescence should be determined in accordance with some consistent plan whereby amounts thus allowed as deductions over useful life of property plus any salvage value remaining will be equivalent to its cost, or to its value as at Mar. 1, 1913, if purchased before that date.

The Treasury adheres to the theory that the depreciation allowance should be just sufficient to afford replacement at original cost of investment and not at some greater or lesser cost which may have been necessitated by changing prices. This is termed the "investment theory" of depreciation as distinguished from the "utility theory," which is based on the assumption that the replacement to be provided by depreciation reserves is one which is not of equal cost, necessarily, but one which is of equal utility. During periods such as that from 1910–1920, variations in prices would create discrepancies in amounts which would be reserved, respectively, according to the two methods. The **majority of practitioners** adhere to the theory followed by the Treasury.

The **Treasury's theory of depreciation** is grounded on the fact that most kinds of property approach a point where their usefulness is exhausted. It is to property of this sort that the allowance is limited. The theory of depreciation does not apply to inventories and to stocks held for trading purposes, nor to land when considered apart from improvements or developments added to it. Neither does it apply to the exhaustion of mineral deposits for which other provision is made. For the Treasury's purposes the deduction is restricted to property used in the business of the taxpayer and does not apply to expenses in the form of depreciation of his dwelling or of automobiles used chiefly for pleasure.

DETERMINING ALLOWANCE FOR DEPRECIATION.—Art. 165 of Reg. 62 provides: "The capital sum to be replaced should be charged off

over the useful life of the property either in equal annual installments or in accordance with any other recognized trade practice, such as an apportionment of the capital sum over units of production. Whatever plan or method of apportionment is adopted must be reasonable and must have due regard to operating conditions during the taxable period."

This gives the taxpayer latitude in determining the exact method to follow in ascertaining his allowance. The expression "any other recognized trade practice" gives almost unlimited scope to the taxpayer, the only limitation being that his plan must have met with recognition in the trade. In England the **reducing balance method** is popular. The Inland Revenue, in prescribing rates, usually expresses them as percentages such as should be used according to that plan. In the United States the **straight-line method,** which requires that an equal percentage be written off original cost each year, is most popular. No plan has received the official sanction of the Treasury Department, probably because it has not attempted to prescribe any rates.

VALUE TO BE DEPRECIATED.—The value to be depreciated is either: (1) the value of the asset as at Feb. 28, 1913, or (2) its cost if acquired subsequent to that date. The former is an arbitrary valuation adopted because it was unconstitutional for Congress to tax income until after the adoption of the Sixteenth Amendment to the Constitution. As a general rule the value as of Mar. 1, 1913, was the original cost less depreciation as of that date. If there had occurred appreciation previously to Mar. 1, this may be taken into consideration in determining value as of Mar. 1, 1913, for depreciation purposes. Conversely, if value was actually less than cost less depreciation, that value should be used as the base. Ordinarily no revaluation on the basis of such appreciation or depreciation in excess of that written off is made; but sometimes, especially in case of patents, the fair market value as of Mar. 1, 1913, is shown to be much in excess of cost.

Cost is the amount paid for property plus additional expenditures for betterments and improvements. The amount subject to depreciation may be reduced by losses, damages, or sales. The greatest difficulty in determining cost for purposes of depreciation arises when a single purchase is made of a plant which consists of both depreciating and non-depreciating assets, as when land and buildings are purchased. In such instances some plan must be devised of determining the values assignable to the depreciating and non-depreciating assets, respectively.

When **consideration given in payment** is in some other form than cash, as for instance when stock or bonds are the consideration, cost is the fair value of such securities. This is determined by the market value of the securities, if they have a market value; otherwise the fair cash value of the property as at time of sale must be determined. When property is acquired by gift or devise, bequest, or descent, value as at time of such transfer is basis for determining depreciation. The estimated salvage or scrap value must be taken into consideration in determining the annual allowance.

ERRORS IN ESTIMATING DEPRECIATION.—If an error is made in estimating proper rate to be used owing to impossibility of forecasting with accuracy the useful life of an asset, when the property is abandoned or scrapped the sum written off plus salvage value may not equal original cost. **If too little has been written off,** the difference should be taken as a loss in the year in which the property is scrapped and should be deducted in that year for income tax purposes. **If too much has been written off,** the excess should be reported as income in the year in which the residual value of the property

is realized. This is equivalent to the realization of a larger salvage value than was anticipated. If the error has been so large as to indicate negligence or fraud, the Commissioner of Internal Revenue may require that the returns for past years be amended and the allowances for depreciation corrected.

This is of importance over a period of years in which tax rates vary extensively, whereas if tax rates remain stationary over long periods it is a matter of relatively small importance. At any time when a taxpayer becomes convinced that his estimates are in error he can alter them, subject to approval of the Commissioner of Internal Revenue.

WHEN DEPRECIATION COMMENCES.—Sometimes **construction** extends over a considerable period of time before operations begin. It is satisfactory to the Treasury if depreciation is first deducted in the year in which the property is put into operation and for the period of time extending from the date of the inception of the property's use to the close of the period for which the return is made. Any depreciation which occurs before property is put into actual use should remain capitalized and thus become a charge to be distributed over the property's useful life.

ADJUSTMENT OF DEPRECIATION RATES.—Since it is impossible to estimate with accuracy the future life of a property, even under favorable circumstances, and since many unforeseen emergencies arise to modify existing estimates, revision of these should be permitted when conditions warrant. Not only is taxpayer allowed to take depreciation due to wear and tear into consideration in making his estimate of his property's future useful life, but also is permitted "to allow for such future (not past) obsolescence as may be expected from experience to result from the normal progress of the art." **Changes in market value** should in no way modify the plan followed since these are not related to useful life of property. Changes which affect market values should be considered only in so far as they actually affect property's estimated useful life.

VARYING RATES FOR SAME PROPERTY.—Among the factors which may make it necessary to use different rates for two items of the same physical construction are: climate, repairs, hours of operation, speed, and so on. It is poor policy to accept **published rates** blindly and without making due allowance for special circumstances which may invalidate rates which are quite proper when applied under different and perhaps more normal circumstances.

RATES TO BE USED.—Contrary to practice of English Inland Revenue, the Treasury Department has found it inadvisable to prescribe any definite rates for specific classes of assets. It lies within the power of the Commissioner to reject any rate he may think excessive. **Care and hours of operation** are but two of many other factors entering into the question of rates. **Repairs** is a factor. **Intent to defraud** will not be presumed unless taxpayer takes a stand which is very clearly unreasonable.

PATENTS AND COPYRIGHTS.—Amount to be allowed as a deduction for patents and copyrights is **cost** or **fair market value** as at Mar. 1, 1913, if acquired before that date. The Treasury has held that **cost of a copyright** to the author consists of his actual cash outlay in securing it, including actual cost of producing the work, but does not include any amount for his time and labor. This amount should be apportioned over life of patent or copyright, from time of grant, or of acquisition, or since Mar. 1, 1913, according to circumstances. In case of a patent or copyright acquired from the government, cost consists of fees, cost of drawings, models and so on, which were

actually paid. **If a patent is purchased with stock,** fair market value of stock paid determines value. **If a patent becomes obsolete** before it expires, the deduction which may be made, with the Commissioner's permission, is such part of amount subject to a depreciation deduction as is proportional to remaining years of patent's life as compared with period which may intervene between date of acquisition of patent and date of its legal expiration.

Patents are similar to good-will, in that their value is directly measured by earning power. Although patents have a definite legal life, their value is frequently more or less permanently capitalized, because wherever possible their value is made permanent through continuous improvements, also because, even when legal title has passed, use and control of the article may be so completely monopolized and exploited that competitors cannot successfully take it up. In such case its value becomes a part of a concern's good-will. Deductions based on a normal life of 17 years are optional with the taxpayer. Where value of a patent tends to become a more or less permanent part of capital through the process described above, the taxpayer is favored. The assignment of patents under an agreement giving assignor 40% interest in profits therefrom, entitles assignor to deduct 40% of depreciation deductible.

DRAWINGS AND MODELS.—The tax-payer is given option of charging off cost of drawings, patterns, models, etc., designed to improve facilities or output, against current revenues, or of treating them as assets. In latter event if their useful lives can be estimated with a reasonable degree of accuracy, they may be written down by the usual method of caring for depreciation.

DISCONTINUED PROPERTY.—Use of property may be discontinued for sundry reasons. If this is done but no sale or other disposition of property is made, taxpayer should make a determination of loss or gain resulting from such abandonment. The loss or gain must be disclosed in taxpayer's return for year in which such loss or gain is ascertained, and a full disclosure of facts relative thereto made. If such discontinued property is sold or otherwise disposed of, amount realized thereon should be compared with estimated salvage value employed in determining loss or gain as explained above. Difference is to be considered as loss or gain of year in which sale or disposition of property is made.

To illustrate, assume that Company A permanently discontinues use of a building which cost $25,000 and against which there exists an offsetting depreciation reserve of $15,000. It is estimated that salvage value of building is $5,000, although it is not sold or otherwise disposed of. Under these circumstances Company A should return a loss of $5,000 along with all available data substantiating that figure. Such loss should be deducted in the return for the year in which its determination is made. If, during next fiscal year, the building is disposed of for $6,000, this amount, compared with estimated salvage value, $5,000, indicates a gain of $1,000, which should be returned as taxable income in the year in which such sale is made.

DEPRECIATION OF FARM PROPERTY.—Farmers are permitted an allowance on all buildings except the dwelling house which they occupy. Farm machinery and other physical property, such as livestock purchased for draft, dairy, or breeding purposes, is subject to a suitable depreciation allowance. No allowance is permissible on livestock raised or purchased for resale. Cost and estimated life are principal factors to be taken into consideration in determining livestock depreciation.

Farmers may determine their net income by the **inventory method.** This requires that an inventory be taken at the close of each year, and that gross income be determined by adding to sales the gain or deducting therefrom the loss for the year due to increase or decrease in value of inventory. This method may be illustrated as follows:

Sales of livestock and farm products for year		$9,000
Inventory of livestock and products, beginning of year	$3,000	
Cost of livestock bought during year	2,000	
	$5,000	
Deduct inventory of livestock and products, end of year	4,000	
Deduct decrease in inventory value at end of year as compared with inventory at beginning of year		1,000
Gross income for year		$8,000

If inventory method is not used, gains, profits, and income derived from sale of products should be included in income whether such products are produced on the farm or are purchased. Sometimes farmers find it desirable to sell property originally purchased for use instead of for resale, such, for example, as farm machinery and draft horses. In such cases amount to be reported as income is excess of sale price over cost reduced by any sums previously deducted for depreciation. If sale price is less than cost less depreciation previously deducted, difference is to be reported as a loss.

One who operates a farm for profit is entitled to deduct all amounts "actually expended" as necessary expenses in carrying on such business. He may consider **cost of ordinary tools** of short life or of small cost as expenses to be deducted directly, but **cost of machinery and farm buildings** should be considered as a capital investment and charged off over period of their useful lives by means of formal allowances for depreciation. Amounts expended in developing farms, orchards, and ranches up to time when they become productive should be capitalized. Usually such capitalized sums will admit of depreciation allowances from time when their productivity commences, because orchards deteriorate as do likewise physical improvements of most kinds. **Purchase of work animals and livestock,** whether for resale or otherwise, is to be regarded as an investment, not as an expense, which will be either amortized by adequate depreciation allowances or removed through resale. **Automobiles** purchased exclusively for farm business are an investment subject to adequate depreciation allowances. **Repairs and upkeep** on them are deductible as expenses, but when they are so deducted the depreciation allowance should not be larger than is sufficient to cover wear and tear not made good through such repairs and upkeep. If an automobile is used partly for farm business and partly for pleasure, only such depreciation cost and cost of repairs and upkeep are deductible as are attributable to farm business. The remainder is a personal expense and as such is not an allowable deduction.

When farmers hold products for more favorable markets, no deduction is permissible on account of **shrinkage in weight or value** or because of **physical deterioration.** Neither is **total loss of a prospective crop** or of **one not yet sold,** a deductible loss. If a farmer is engaged in raising and selling livestock, he is not permitted to make any deduction for value of those which perish. If, however, livestock has been purchased for any purpose and afterwards dies or is killed by order of the authorities of a state or the United States.

actual purchase price reduced by any depreciation previously allowed thereon, and also any insurance received, is a deductible expense. Same general rule applies to other property destroyed by order of state or United States authorities. **When inventory method is followed** in determining gross income, no deductions can be made for livestock or products lost, since such losses are reflected in inventory at the year's end.

REMOVAL OF BUILDINGS AND EQUIPMENT.—When old buildings are removed or destroyed and when old machinery is scrapped to make replacement possible, such sum may be deducted as a loss as is represented by difference between cost of scrapped property and "the amount of depreciation sustained with respect to the property prior to its demolition or scrapping, and allowable as a deduction in computing net income." If a taxpayer purchases real estate and demolishes a building standing thereon to make place for a new building, he is not permitted to make any deduction on account of razed building or for cost incurred in demolishing it. The presumption is that the land, exclusive of value of old building, is equal to purchase price of property plus cost of removal of old building.

SECURITIES AND STOCKS.—Fluctuations in market value of stocks and bonds give no occasion for deductions from gross income on account of shrinkage in value of such securities. Such loss can be claimed only in case it results from actual disposition of properties while in possession of lessee. Therefore no allowance for depreciation can be granted. Allowance may be had for repairs and upkeep cost incurred by lessee, however.

ACCOUNTING PROCEDURE.—Under the **corporation excise tax law of 1909,** the Commissioner required that depreciation, to be an allowable deduction, must be credited directly to property account affected. This was contrary to best accounting practice. On May 9, 1912, use of reserve accounts for reception of such credits was recognized as correct procedure. Since then it has had the approval of the Internal Revenue Bureau, although if taxpayer prefers, he may still follow procedure of crediting allowance directly to property account.

The requirement that depreciation allowances be computed with "express reference to specific items, units or groups of property" is one which, if adhered to, would do much towards placing procedure with reference to depreciation on a scientific basis. It is required that each item or unit be considered separately or else "specifically included in a group with others to which the same factors apply." The expression, "the same factors," refers to the conditions which determine rate and nature of depreciation. Many concerns still follow **antiquated procedure** of writing off a round sum on entire cost of depreciating assets. Frequently its amount depends on current earnings, being increased in prosperous years and decreased in lean years.

MANAGEMENT OF RESERVES.—The Bureau of Internal Revenue, in its earlier rulings, held that the reserves could not be used for any other purpose than making good loss sustained through depreciation, and that "the investment of depreciation reserve funds in the concern's own plant in the way of additions and extensions would appear to be such a diversion." This was based on theory that such investing of depreciation funds would indicate that excessive amounts were being set aside to cover depreciation and that a corporation doing this would be adding to value of its capital assets.

In a letter to Willard H. Lawton, replying to his letter taking issue with this stand, Bureau of Internal Revenue said that although investment of depreciation funds in additions and betterments appeared to be a diversion

of such funds to purposes other than making good depreciation already sustained, it may be allowed "if the property account is charged with the amount of the fund thus used, in which case the depreciation account remains a liability and renewals and replacements when made are charged against it rather than against current income."

On Apr. 10, 1917, the Bureau ruled that the reserves need not be held intact or remain idle until needed to replace specific assets for which reservations were made, or until needed to restore capital invested in depleted assets. Providing reserves are not excessive and are properly entered on books so as to constitute a liability against their respective complementary assets, conversion of such reserves into tangible assets would not be regarded as constituting a diversion of funds such as would make the deduction for depreciation an improper one.

DIVERSION OF RESERVES.—Depreciation reserves are set up to avoid overstatements of profits. They do not form a part of surplus, except in so far as they are excessive. For this reason **dividend payments** are not properly chargeable against them, and should not in any case be so charged as long as there exists any distributable surplus. In 1917 the Bureau held that a dividend so charged would be regarded not as a distribution of profits but as a distribution of capital, and therefore not subject to tax in the hands of the taxpayer. Dividends ought not to be charged against depreciation reserves in any case, because if there is a surplus it should be charged, while if there is no surplus such a dividend payment is equivalent to a reduction of capital and should be regarded as such rather than as a distribution of reserves. In Oct. 1917 the Bureau revoked the ruling made in the preceding July, in the following manner: "All such dividends received by stockholders declared out of such reserves accumulated subsequent to Mar. 1, 1913, constitute income to the stockholder under the act of Sept. 8, 1916, and must be accounted for in returns of net income."

Present attitude of the Treasury regarding **distribution of reserves** may be summarized briefly. Depreciation reserves are not surplus, and therefore ordinary dividends cannot be paid from them. If dividends are so paid they are to be regarded as liquidating dividends and are taxable as income to recipient only to extent that amount so paid is in excess of cost or fair market value of his shares of stock as of Mar. 1, 1913. Before such a distribution from a depletion or depreciation reserve will be deemed to have been made, surplus and undivided profits must first have been exhausted. When dividends are paid out of such reserves, stockholders must be notified that such dividends are a return of capital and not a distribution of profits.

A **somewhat different problem** arises when a corporation proceeds to distribute its so-called net income among its stockholders without having first made provision for depreciation. Under earlier regulations such corporation was estopped from any deduction on account of such depreciation, unless conclusively shown that property account had been reduced by amount claimed for depreciation, or unless it had been credited to a depreciation reserve account and was shown to be of reasonable amount.

This has been modified to the extent that a corporation which has thus paid dividends without first having set up depreciation reserves may reopen its books in order to make proper reservations. It must then file an amended return for period in question. This privilege is not granted if preparation of the original return was fraudulent or grossly negligent. When proper adjustment is made and reserve set up, corporation is in position of having paid dividends out of its depreciation reserves to extent that it has exceeded

its actual net income. The stockholders have received dividends consisting partly of a distribution of capital. So they should make **amended returns** showing amount received from profits and from capital, i.e., from the depreciation reserve, so that tax can be adjusted.

SUDDEN OBSOLESCENCE, ETC.—Various emergencies may cause sudden termination of usefulness of capital assets. **Machinery** may become obsolete as result of new inventions. An increase in cost of or change in **method of manufacture** may make it necessary to abandon it altogether, in which case machinery specially constructed to facilitate its processes may be abandoned. **Legislation** sometimes directly or indirectly makes impossible continued profitable use of property. Such cases of loss are not supposed to be cared for by ordinary process of allowing for depreciation. Under these circumstances taxpayer may claim as a loss in year in which he discontinues use of such assets "the difference between the cost, or, if acquired prior to Mar. 1, 1913, fair market price or value as of that date of any assets so discarded (less any depreciation sustained and allowable as a deduction in computing net income) and its salvage value remaining."

TREASURY POLICY ON OBSOLESCENCE.—Until passage of 1918 revenue law, no deduction for obsolescence was specifically recognized by law. The **law of 1918** provided for a "reasonable allowance for obsolescence" in addition to that for exhaustion, wear and tear. By **provisions of earlier laws** it was necessary to dispose of property before loss due to obsolescence could be deducted for purpose of arriving at taxable income. **Treasury regulations** issued in interpretation of 1921 law provide that "inasmuch as under the provisions of the income tax acts in effect prior to the Revenue Act of 1918 deductions for obsolescence of property were not allowed except as a loss for the year in which the property was sold or permanently abandoned a taxpayer may for 1918 and subsequent years revise the estimate of the useful life of any property so as to allow for such future (not past) obsolescence as may be expected from experience to result from the normal progress of the art." The regulations further provide that the proper allowance to be made for exhaustion, wear and tear, and obsolescence is such as will (by a consistent plan, but not necessarily at a uniform rate), during useful life of property, with salvage value, and having due regard for expenditures for current upkeep, replace original cost of property, or its value as of Mar. 1, 1913, if taxpayer acquired it before that date. The regulations still further provide that:

> When, through some change in business conditions, the usefulness in the business of some or all of the capital assets is suddenly terminated, so that the taxpayer discontinues the business or discards such assets permanently from use in such business, he may claim as a loss for the year in which he takes such action the difference between the cost, or if acquired prior to March 1, 1913, the fair market price or value as of that date of any asset so discarded (less any depreciation sustained and allowable as a deduction in computing net income) and its salvage value remaining. This exception to the rule requiring a sale or other disposition of property in order to establish a loss requires proof of **some unforeseen cause by reason of which the property has been prematurely discarded,** as, for example, where an increase in the cost of or other change in the manufacture of any product makes it necessary to abandon such manufacture, to which special machinery is exclusively devoted, or where new legislation directly or indirectly makes the continued profitable use of the property impossible.

This regulation is issued as an interpretation of that section of the law which provides for the deduction of "losses sustained during the taxable year and not compensated for by insurance or otherwise, if incurred in trade or business."

No mention is made in the law of **inadequacy** and it is not emphasized in the regulations and rulings.

TREASURY POLICY ON DEPLETION.—The **corporation excise law of 1909** required that corporations, in determining net income, should make a deduction for "all losses actually sustained within the year."

Few corporations claimed a deduction for depletion of natural resources under this provision.

The **law of 1913** was the first to contain definite provision for an allowance for depletion of natural deposits, viz.: "In case of mines a reasonable allowance for depletion of ores and all other natural deposits, not to exceed 5% of the gross value at the mine of the output for the year for which the computation is made." The law said nothing regarding the proper basis for determining the value to be written off for depletion purposes.

The **law of 1916** provided that depletion allowances should not exceed "market value in the mine of the product thereof which has been mined and sold during the year for which the return and computation are made," but total allowable was not to exceed original investment or, if purchase of deposit is made before Mar. 1, 1913, fair market value as of that date.

The **law of 1918** provided for a "reasonable allowance for depletion . . . according to the peculiar conditions in each case, based upon cost including cost of development not otherwise deducted." **For properties acquired before Mar. 1, 1913,** fair market value as of that date is basis for depletion. Further provision was made for discovery of natural resources on or after Mar. 1, 1913, where fair market value was "materially disproportionate to the cost." In this case the depletion allowance was based on fair market value as at date of discovery or within 30 days after discovery.

THEORY OF DEPLETION.— Until the advent of income taxation the most authoritative interpretations of the theory of depletion were to the effect that the depletion allowance should be based strictly on **original cost,** and that the only effect of new discoveries is to lessen the amount of depletion allowable per unit of output. This plan has been described by A. Lowes Dickinson, as follows:[11]

> . . . As a general principle, whatever there was in the ground, whether known or unknown, has been reduced during the period under consideration by whatever amount has been extracted; and while the new discoveries may be accepted as reducing the necessary rate of provision for extinction from, say, one dollar to one cent per unit of quantity, the original principle that provision must be made holds good on the smaller figure, whatever it is. It may be, of course, that the provisions made in earlier years have been sufficient to cover a number of future years on this basis, from the commencement, of the rate subsequently found to be sufficient in view of the new discoveries; and in this case there would be no necessity to provide further for extinction until the total production at the new rate is equal to the total amount written off.

Accountants long regarded this position as correct. Its **practical application** necessitated frequent revision of the depletion allowance per unit of output where, as in case of copper mines, new discoveries are continually being made. **Under this plan** the charge per unit of output continues at all times to be a fraction of the original cost of properties, but the denominator which determines the amount of that fraction—the changing amount of known existing tonnage—changes with each new discovery; consequently the depletion per unit of output also changes.

The application of the income tax led to reconsideration and revision of

[11] Accounting, Practice and Procedure, pp. 172–173.

these views. The status of its theory and application have been stated as follows:[12]

Theory:

1. That gradual exhaustion of the ore body is an element of expense which should be taken up in each and every fiscal period during which minerals continue to be won from the mine, at a more or less constant rate per ton.

2. That the total expense of this character to be absorbed in the operating accounts is the intrinsic value of the mine content (in place *en bloc*) which existed from the beginning, although much of it may have been latent and determined only by "extension in depth."

3. That by the term "intrinsic value of the mine content" as used above is meant the product of two factors:

(a) The tonnage of mine content as finally ascertained.

(b) A unit price per ton representing the bedrock value of the average grade of ore, in place *en bloc* including proved ore, probable ore, and prospective ore, estimated at the commencement of business. In bedrock value the price of metals in estimated mine content is calculated at some figure between "basic" and "normal"; cost of production and selling is calculated at maximum probability; the rate of mining and the life of the property must be estimated; from these factors a discounted or present value at true rate of interest is obtained; and this capital value is then reduced by a substantial value due to the element of risk.

Application of Theory:

1. The depletion expense of each and every fiscal period during which mining operations occur is the tonnage of ores extracted multiplied by the more or less constant rate per ton established by original estimate of value in place.

2. The rate per ton of ore extracted, for purposes of the depletion expense computation, would change only in the event of subsequent discovery of relatively large bodies of ore of a grade differing widely from the original estimates.

3. In the case of "extension in depth" developing new values it may be necessary from time to time to adjust the book value of the mining property, in order to harmonize with intrinsic value.

PROBLEM OF VALUATION.—In all cases, except where cost serves as basis for determination of depletion charges, the Treasury requires that **basis** shall be **fair market valuation** as of a "basic date," i.e.: Mar. 1, 1913, in case of property acquired before that date; date of acquisition in case of property acquired on or after Mar. 1, 1913; or date of discovery; or within 30 days thereafter in case of property discovered after Mar. 1, 1913. The "fair market value" of a property is that amount which "would induce a willing seller to sell and a willing buyer to purchase." There are many ways of determining such an amount. It is necessary to employ a method of valuation which is comprehensive enough to be scientific.

The **Treasury regulations** provide that where fair market value as of a given date is to serve as depreciation base, such valuation must be determined "in the light of conditions and circumstances known at that date, regardless of later discoveries or developments." A prominent engineer says, however, that an engineer could not be expected to "stultify" himself by ignoring such later developments as would aid in determining value as of a past date.

Following the **practice of competent mining engineers** the Treasury has adopted the **present value method** of valuation; but the Commissioner considers any and all factors and evidence which throw light on what market value is. Among these are: cost, actual sales and transfers of similar properties, market value of stocks or shares, royalties and rentals, value fixed by owner for purposes of capital stock tax, valuation for local or state taxation, partnership accountings, records of litigation in which the property was in question, amount at which property may have been inventoried in probate

[12] William B. Gower, in the *Journal of Accountancy*, Aug. 1918, pp. 85–86.

court, and disinterested appraisals by approved methods. Many of the ordinary evidences of value are not good criteria in case of mines and oil and gas wells, because of dissimilarities existing even between properties which lie in juxtaposition.

Present Value Method.—See section on "Valuation."[13]

Depreciation Rates for Specific Assets

INTRODUCTORY.—Depreciation rates are empirical in character and local conditions are important factors. Nevertheless, much progress towards **standardization of rates** has been made by associations of manufacturers and others. The income tax has made desirable a comparison of rates used. The rates given in the following pages represent the best practice, but they should always be accepted with reservations necessary to allow for local conditions.

Whether or not **obsolescence** is covered in the rate is a consideration of importance. If the **sinking fund method** is followed and income from the fund is added to the principal, the rate is correspondingly reduced. Policy regarding **charging betterments and extensions** to revenue is a factor. **Handling of repairs** is a consideration of equal importance. The following rates should be accepted only with such considerations as the above in mind.

AUTOMOBILES.—R. H. Whitten, in "Valuation of Public Service Corporations,"[14] gives life of automobiles as 10 years, but this is excessive under most conditions. Montgomery suggests 20% per annum in "Income Tax Procedure, 1918."[15] In England 20% per annum, reducing balance method, is allowed on motor omnibuses for income tax purposes. The Treasury suggests a depreciation rate of from 20% to 25%, based on a life of 4 to 5 years, according to use.

The Uniform Accounts for Systems of Water Supply, Bureau of the Census, places the useful life of automobiles at 10 years.

The Rulings Board of the Finance Department of the Bureau of Aircraft production in Mar. 1918, during war times, ruled that 20% per annum be allowed on automobiles in computing contractors' reimbursements for normal depreciation.

BANKS.—Banks usually make liberal allowances for depreciation, some making it a policy to write off entire cost of premises over a comparatively short period of years. On Dec. 14, 1918, the Federal Reserve Board sent the following instructions to all federal reserve banks:

In order that there may be uniformity of practice, the Federal Reserve Board has approved for Federal Reserve Banks the adoption of the following rules for the treatment of depreciation and extraordinary charges against earnings and profit and loss account at the closing of books Dec. 31, 1918:

1. **Cost of Federal Reserve and Federal Reserve bank notes.**—Balance of account, as shown by books on Dec. 31, to be charged to current expense account.
2. **Furniture and equipment account.**—Balance of account, as shown by books on Dec. 31, to be charged to current expense account.
3. **Cost of vaults.**—(a) All expenditures made during the year 1918 for vaults and vault equipment to be charged to current expense account; (b) balance of account, as shown by books on Dec. 31, 1917, to be charged to profit and loss account.

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[13] See p. 463.
[14] Vol. I, p. 352.
[15] P. 373.

4. **Alterations and improvements.**—Charge against current expense account all expenditures made during the year 1918 in repairing, altering, or remodeling bank premises.

5. **Bank premises.**—(a) Where properties have been purchased with the intention of erecting new bank buildings, banks to be permitted to charge against profit and loss account an amount sufficient to cover the estimated value of buildings which will have to be razed, such estimated valuation of buildings to be submitted to the Federal Reserve Board for approval before depreciation allowance is determined.

(b) Where properties have been remodeled and are now used as permanent banking quarters by a Federal Reserve Bank, a reasonable depreciation charge will be permitted, but in no case shall it exceed 10% of the estimated value of buildings on Dec. 31, 1918.

(c) Where a Federal Reserve Bank has purchased, or may purchase, a site for a new building, it will be permitted to charge down the book value of premises now owned and occupied to a fair selling price, such price to be submitted to the Federal Reserve Board for approval before depreciation allowance is determined.

The current books of banks do not correctly state taxable income. The Bureau of Internal Revenue says this is true because "furniture, fixtures, and improvements have been charged to expense account, and further for the reason that national bank examiners and State bank examiners have arbitrarily written down on the books of the banks, banking house furniture and fixtures." Since banks are not permitted to reopen their books and charge depreciation or adjust asset accounts (banking house, furniture and fixtures, etc.), the Bureau of Internal Revenue permits banks to keep separate books for income tax purposes which will enable them to file correct returns, these to be made up from the current books and necessary adjustments to be made thereon for depreciation.[16]

BOILERS.—R. H. Whitten, in "Valuation of Public Service Corporations,"[17] gives life of boilers as 20 years. Dicksee allows from 12½% to 20% on reducing balance.[18] In *Spring Valley Water Works* v. *San Francisco*,[19] the district judge found annual depreciation of boilers to be 5%. Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives life of boilers as 20 years.

BOIS D'ARC.—Life given as 100 years by Interstate Commerce Commission, in Valuation Docket No. 2.[20]

BRIDGES.—Interstate Commerce Commission in its valuation of Texas Midland Railway found service condition for deck and superstructure separately. It allowed 70 years as life of metal parts.[21]

BOTTLE MANUFACTURERS.—The following rates have been adopted by the National Bottle Manufacturers Association:

	Annual Rate of Depreciation
BUILDINGS:	%
Concrete or all steel	3
Mill construction	3–4
Ordinary brick	4–5
Frame	7½–10

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[16] Committee on Appeals and Review, Memorandum 337, 5-21-1415.
[17] Vol. I, p. 352.
[18] H. R. Hatfield, Modern Accounting, p. 142.
[19] 192 Fed. 137, decided Oct. 21, 1911.
[20] P. 52.
[21] See Valuation Docket No. 2, pp. 82, 128, 181.

	Annual Rate of Depreciation
Machinery and Operating Equipment:	%
Steam and power plant	–10
Producer plant	–12
Mixers	–10
Tank (entire tank)	–10
Blowing machines	–15
Lehrs	–10
Conveyors	–10
Moulds	–25
Other machinery and equipment	–10

BUILDINGS.—The following rates, adopted by the Manufacturers' Cost Conference, are quoted from Ficker's "Industrial Cost Finding":[22]

	Annual Rate of Depreciation
	%
Reinforced concrete or steel and tile	2
Brick and steel with non-combustible roof and concrete floors	2.5
Brick, steel and wood	3
Brick and wood	3
Steel frame, wooden roof, and corrugated iron walls	3.5
Steel frame, non-combustible roof, and corrugated iron walls	3
Concrete block, with wooden roofs, floors	3.5
All-wood structures, cheap (20 years)	5
All-wood structures, well built (20 years)	4.5
Sprinkler system (20 years)	4

The following is taken from McKay's "Valuing Industrial Properties":[23]

	Life in Years	Authority
Buildings (brick)	66⅔	Henry Floy
Buildings (brick)	50	E. G. Connette
Fuel and water stations	25–50	H. P. Gillette
Grain elevators	33⅓	"
Miscellaneous buildings	33⅓	"
Masonry buildings	40–50	"
Railroad buildings:		
Brick (salvage value 8%)	33	Wm. Arthur
Concrete and stone (salvage value 8%)	50	"
Steel frame, brick and stone (salvage value 8%)	50	"
Shops—combination steel, iron, and wood	25	"
Road department buildings	33	H. P. Gillette
Roundhouse and shops	33	"
Transportation department buildings	33	"
Wooden frame railroad station buildings	33	"
Buildings, fireproof	50	C. W. McKay
Buildings, slow-burning	30	"
Buildings, non-fireproof	15	"

[22] P. 337. [23] P. 145.

The following is taken from Kimball's "Cost Finding":

	Life in Years
Brick or steel frame buildings, easy service	40
Brick or steel frame buildings, severe service	20
Good wooden buildings, easy service	30
Good wooden buildings, severe service	15

The following is from Nicholson and Rohrbach's "Cost Accounting,"[24] and is said to have been adopted at various conferences of a large manufacturing enterprise:

	Annual Rate of Depreciation %
BUILDINGS:	
Housing:	
Dwellings—frame	3
Tenement houses	5
Hotels	5
Fireproof:	
Concrete	2
Brick	2½
Brick and concrete floors	2½
Main buildings—brick and concrete	2–2½
Steel frame—non-combustible roof, and corrugated iron walls	3
Steel with corrugated sheet iron or steel plate	5
Corrugated iron—steel frame concrete floor	3
Reinforced concrete, or steel and tile	2
Stone, brick, concrete with or without steel, first-class stone and brick	2
Mill or slow-burning buildings—brick, steel, and wood, or brick and wood	3
Non-fireproof:	
Outbuildings	7½
Wood	5
Substantial wooden buildings	5
All-wood structures—well built	5
All-wood structures—cheap material	7½
Steel frame—wooden roof, and corrugated iron walls	5
Steel or corrugated sheet iron with wood	5
Corrugated iron—wood frame and floor	5
Corrugated iron—wood frame, concrete floor	5
Corrugated iron—steel frame, wood floor	5
Concrete block with wooden roofs and floors	5
Miscellaneous structures:	
Hose reel and guard houses	15
Pine swamp (magazines)	2
Frames, stables, and sheds	5
Bins—concrete and brick	5
Bins—wood alone	20
Trestles—steel (not including rails or ties)	3⅓
Trestles—wood (not including rails or ties)	6⅔
Docks, piers, and wharves	3⅓

[24] P. 146.

Dry docks—basin	2
Dry docks—floating	5
Ship sheds	$3\frac{1}{3}$
Fences—wooden	10
Fences—wooden and wire mesh	$8\frac{1}{3}$
Pump	5
Retaining walls	2–5
Tunnels, underground piping, vaults, and general conduits	5
Stack—brick	3
LAND:	
Dams and waterways	$1\frac{1}{2}$
Roadways and sidewalks	4
Paving and pavements	4–10
Wells—gas	10
Wells—water	3

The following is from Ficker's "Industrial Cost Finding": [25]

CONSTRUCTION	From Investigation by:	Life in Years
Wooden	Pacific Gas & Elec. Co.	20
Wooden	Rosecrans	25
Corrugated iron:		
Wooden frame and floor	Pacific Gas & Elec. Co.	20
Wooden frame and concrete floor	" " " " "	25
Steel frame and wood floor	" " " " "	30
Steel frame and concrete floor	" " " " "	36
Brick:		
Wood roof, wood floor	" " " " "	30
Slate roof, wood floor	" " " " "	36
Corrugated iron roof, concrete floor	" " " " "	40
Slate roof, concrete floor	" " " " "	50
Reinforced concrete roof: concrete floor	" " " " "	50
First-class stone and brick	Wisconsin R. R. Com.	75
Fireproof	Chicago Telephone Co.	40
Reinforced concrete roof: concrete floor	Pacific Gas & Elec. Co.	50
Tools and shop machinery	Cooley	$12\frac{1}{2}$
Tools and shop machinery	Starrett	14.2
Tools and shop machinery	Milwaukee E. R. & L.	13.3
Tools and shop machinery	Chicago U. T. Co.	20
Tools and shop machinery	Stone & Webster	20

The following quotation is from a federal bulletin on depreciation restricted in application to Form 1040 A:

Under question 99 of the Income Tax Primer of 1918 an estimate is made of the probable useful lifetime of certain kinds of buildings. It is estimated that the average life of a frame building "without repair or replacement" is 25 years; of a brick building, 35 years; of a stone or steel and concrete building, 50 to 100 years. It is also estimated that the lifetime of ordinary machinery is 10 years, that of automobiles used for business or farm purposes and farm tractors, 4 to 5 years.

Therefore, wherever the cost of repairs is not known or is so thoroughly inter-mixed with replacements as to be inseparable the flat rate of 4% for frame and 3% for brick buildings will, under ordinary conditions, cover both repairs and depreciation. In other words.

[25] P. 339.

the estimate of 25 years for a frame and 35 years for the life of a brick is based on the assumption that they are not being kept in repair.

But property kept in repair will, of course, be subject to a longer life because the weaker parts of the building are continually being bolstered up and made to last as long as the strongest parts. And as a matter of correct accounting, where the cost of repairs is known, it is preferable to charge both the repairs and a reasonable and steady allowance for depreciation. This is permitted by article 162 of the regulations previously quoted that "Property kept in repair may, nevertheless, be the subject of a depreciation allowance." The accounting truth is recognized that no repairs can wholly offset depreciation. Repairs do in fact offset the depreciation of a part (that particular part to which they have been applied) but they cannot offset or arrest the depreciation of the whole. . . . .

It will be found, that if kept in repair, under ordinary conditions the rate of depreciation on a frame building should be 2½% (based on a life of 40 years) and the rate of depreciation on a brick building should be 2% (based on a life of 50 years). Where, however, repairs are not claimed a rate of 4% (or 25 years) for frame and 3% (or 35 years) for brick should be allowed.

Of course, it will be remembered that the basis here set is for standard cases occurring under standard conditions. As the law and regulations intend that each individual case shall be decided on its own individual merits it is plain that any case that is affected by any unusual condition must be given an individual consideration and an individual solution. For examples, buildings, in a flood district, which were subject to being flooded once or twice a year must be allowed an added rate of depreciation equal to the amount of this unusual wear and tear. Buildings (and, of course, machinery or other property) which are subject to unusual wear and tear by the nature of the business in which they are employed should have this fact reflected in the rate of depreciation allotted to them. . . . .

Reverting to the subject of depreciation through wear and tear, it should be remembered by the deputy that because the rates of 2½% on a frame building and 2% on a brick are herein mentioned as covering ordinary conditions, that it is not possible under the same conditions for the actual percentage rate to be higher. Many deputies make no adjustment for the fact that a building may have been purchased by the taxpayer after it was already quite old. But it is evident that if a brick building, which was constructed for $5,000 and was expected to last 50 years, is purchased by the taxpayer after it is 30 years old, he cannot expect the building to last more than another 20 years. The price which he pays for the building which is 30 years old will not be nearly as great as the original cost. Therefore, to give him a rate of 2% on this later value merely because the construction is brick would not conform to the regulations which require that the remaining life shall be taken into consideration. If he purchased the house for $2,000 it is evident that on this new cost price he should be allowed 5%, which rec gnizes that the low value of $2,000 reflected the fact that the building would only last 20 years. It can readily be seen that for this building to allow 5% on $2,000 results in no greater charge than to allow 2% on its original cost of $5,000.

CEMENT INDUSTRY.—The following mortality table, which shows average estimated life of various properties used in the cement industry, has been adopted:

	Life in Years
MACHINERY:	
Quarry:	
Locomotives	13
Tracks and cars	9
Steam shovels	11
Dredges	11
Drills—well	9
Drills—tripod	7
Livestock	8
Carts and wagons	7
Cable-way	9

	Life in Years
Raw Department:	
Crushing machinery	14
Dryers—upright	11
Dryers—rotary	11
Slurry tanks	16
Grinding machinery	13
Clinker Burning Department:	
Kilns	13
Coolers—upright	12
Coolers—rotary	13
Clinker Grinding Machinery	12
Coal Mill:	
Dryers	11
Grinding machinery	14
Power House:	
Boilers	15
Engines	17
Generators	16
Motors	14
Stock House Machinery	10
Machinery and B. S. Shop Machinery	15
BUILDINGS:	
Mill:	
Concrete	50
Steel and corrugated iron	33
Steel and stucco	35
Steel and brick	40
Timber	20
General (Mill Office, Laboratory, Store House, etc.):	
Concrete	60
Steel and corrugated iron	40
Steel and stucco	45
Steel and brick	50
Frame	30
Frame and stucco	33
Dwellings:	
Concrete	60
Brick	50
Frame	30
Frame and stucco	33

ELECTRICAL MANUFACTURING INDUSTRY.—The following extract is from the standard accounting and cost system of the electrical manufacturing industry:

Determination and Application of Rates for Depreciating Manufacturing Plant Account

I. GENERAL

1. All rates are to be applied to first cost.
2. The rates recommended are those which are to be applied to first costs, to obtain amount to be included in costs and estimated costs,

and are in addition to maintenance expenditures and renewals as provided for in indirect manufacturing expense accounts.

3. All rates recommended are based on normal costs and operating conditions. In case of a factory working overtime and with night shifts for any appreciable length of time, or under other extraordinary conditions, or in cases of facilities acquired at excessive costs, higher rates should be assessed so as to absorb in the costs, during the period of extraordinary activity:
   1. The abnormal physical exhaustion.
   2. The abnormal primary cost of buildings and structures.
   3. The cost of equipment estimated to be surplus in normal times.

	Rate Recommended %
A. LAND	
Land—purchase price	0
Land—grading and improvements	0
B. BUILDINGS	
a. Buildings (total reserve 75%):	
Wooden buildings and sheds	10
Corrugated iron buildings	10
Brick and wood (mill construction)	5
Brick and steel (fireproof construction)	3
Reinforced concrete (fireproof construction)	3

NOTE.—In those cases where plant accounts include accessories, care should be taken to segregate such accessories, in order that the proper rates of depreciation may be applied.

	Rate Recommended %
b. Structures (total reserve 90%):	
Structures	12½
Water, drainage and sewer pipes (outside)	6
Piping and electrical conductors (outside)	6
c. Sprinkler system (total reserve 90%)	5
d. Heating and ventilating and other inside piping and wiring (total reserve 90%):	
Heating and ventilating	5
Other inside piping and wiring	5
C. MACHINERY AND TOOLS	
a. Machinery (total reserve 90%):	
Special machinery	7½–90
Rates on special machinery depend upon the estimated present use and their adaptability for other use.	
Standard machinery	7½–10
Electrical apparatus	7½–10
Ovens and furnaces	10
Power plant equipment	7½
b. Machinery—foundations and installation (total reserve 100%):	
Foundations for machinery and apparatus	12½
Installation of machinery	12½

Years to be Applied

c. Semi-durable tools and instruments (total reserve 100%):

Semi-durable tools, 25% on each year's expenditures.... 4

Set up on the books an estimated value equivalent to the additions to the account during the last 4 years.

Electrical equipment, 16⅔% on each year's expenditures.... 6

Molds, jigs, punches, dies, and special tools, 33⅓% on each year's expenditures.... 3

Metal flasks:

Inasmuch as all foundries have their proper equipment of metal flasks, the cost of making all metal flasks is to be charged to indirect expense account No. 460. When flasks are scrapped, the scrap value will be credited to indirect expense account No. 460. The difference between the inventory at scrap value at the beginning and the end of the year will be taken in the expense account. There will, therefore, be no depreciation on this item.

D. Patterns and Drawings (total reserve 100%)

a. Patterns, 33⅓% on each year's expenditures.... 3

b. Drawings:

Set up on books estimated or appraisal value. Expenditures chargeable to development or shop supplies account No. 240.

E. Furniture, Fixtures, and Appliances (total reserve 100%)

a. Furniture and fixtures in shops
b. Furniture and appliances in factory offices
c. Fire protective apparatus

(a–c): 20% on each year's expenditures.... 5

From a valuation viewpoint, it is recommended that 100% reserve be set aside.

Set up on the books a value obtained by inventory where practicable. Where this method is impracticable, a value should be set up on basis of previous year's additions, the number of such years being dependent upon the varying circumstances.

F. Other Equipment (total reserve 90%)

Railway tracks and overhead equipment; renewals and repairs charged to operating expense.... None

Rolling stock.... 3–6

Automobiles and other conveyances.... 25

II. Property Other Than Manufacturing Plants

The rates recommended are those that would be applied for similar items for manufacturing plant items. In case items are dissimilar, rates should be applied consistent with those used for manufacturing plant items.

ELECTRIC PLANTS.—The following is from Nicholson and Rohrbach's "Cost Accounting":[26]

[26] P. 147.

	Annual Rate of Depreciation
Electric Plant Equipment:	%
Dynamos	5
Electric machinery—generators	5
Electric machinery—motors	$5\frac{1}{2}$
Electric motors and apparatus	10
Storage batteries	6
Substation equipment	5
Switchboards—telephone central	5
Switchboards—telephone P. B. X.	$7\frac{1}{2}$
Switchboards and wiring	5
Switchboards, main wiring, and conduit	5
Aerial lines	5
Cables—underground (high tension)	5
Electric wiring	5
Conduits	2
Conduits, manholes, and paving	5
Transformers—station service	5

The following is from Barker's "Public Utility Rates":

Electricity-Supply Works	Life in Years	Authority	Cause
Anchors and guys	10–20	Wisconsin R. R. Com.	D.
Arc lamps and hangings	10–15	" " "	D. & O.
		St. Louis P. S. Com.	
Belting	20–25	Wisconsin R. R. Com.	D.
Boilers:			
Fire-tube	10–15	" " "	D.
Water-tube	20–30	" " "	D.
Buildings:			
Masonry	75	" " "	O.
Wooden frame or second-class	50	" " "	D. & O.
Chimneys and stacks:			
Masonry	30	Barker	
Steel	10	"	
Condensers	20–30	Wisconsin R. R. Com.	
		Chicago Trac. Val. Com.	D.
Conduits and manholes	30–50	Wisconsin R. R. Com.	O.
Conveyors:			
Coal or ash	10	" " "	D.
Ash or combined coal and ash	5	Barker	D.
Cross arms	10–15	Wisconsin R. R. Com.	D.
Engines:			
Gas	10–15	" " "	D. & O.
Steam high-speed	15–20	" " "	D.
Steam slow-speed	25–30	" " "	D. & O.
Feed-water heaters	20–30	" " "	D.
Fuse boxes	10–12	" " "	D.
Fuel-oil equipment	25	Chicago Trac. Val. Com.	D.
Generators, motors and converters:			
High-speed	15	Barker	D.
Slow-speed	20	"	O.
New types	20	Wisconsin R. R. Com.	D.

Electricity-Supply Works	Life in Years	Authority	Cause
Old types	15	Wisconsin R. R. Com.	O.
Turbine driven	20	" " "	D.
Lightning arresters	15–20	" " "	D.
Piping and covering	20–30	" " "	O. & D.
Poles:			
Cedar in concrete	12–18	" " "	D.
Cedar in earth	10–18	" " "	D.
Iron or steel in concrete	15–30	Barker	O. & D.
Iron or steel in earth	10–15	Wisconsin R. R. Com.	D.
Reinforced concrete	50	Barker	O.
Pumps:			
Boiler feed	15–20	Wisconsin R. R. Com.	D.
Small centrifugal	20–30	" " "	D.
Service boxes	10–12	" " "	D.
Shafting	20–40	" " "	O.
Station wiring, etc	30	" " "	O. & D.
Stokers	20	Chicago Trac. Val. Com.	D.
Storage batteries	15	Wisconsin R. R. Com.	D.
Switchboard instruments and wiring	25–30	" " "	O. & D.
Switchboards, old types	20–30	" " "	O.
New types	15–20	" " "	O.
Turbines:			
Hydraulic, old types	25–40	" " "	O.
New types	30–50	" " "	O.
Steam, large units	20	" " "	D. & O.
Auxiliary units	10–20	Barker	D. & O.
Transformers:			
Consumers	10–15	Wisconsin R. R. Com.	D.
Station and substation	20	" " "	O. & D.
Watt-hour meters (consumers)	10–15	" " "	D.
Wire:			
Insulated copper line	10–15	" " "	D.
Lead-covered aerial cable	10–15	" " "	D. & O.
Lead-covered underground cable	20–25	" " "	O.

Note: D. denotes depreciation. O. denotes obsolescence.

The Arizona Commission allowed $3\frac{1}{2}\%$ on depreciable property of electrical companies in 1913. The California Commission allowed 3% on the value of property in 1913.[27] The Nevada Commission allowed 5% in a mining camp in 1913.[28] In 1912 the Wisconsin Commission allowed $4\frac{1}{2}\%$ on reproduction cost new.[29] In New York a committee formed to report on statistics and accounts of public utility companies advocated a minimum rate of depreciation of $3\frac{1}{2}\%$ on the entire fixed capital of electric companies. The English Inland Revenue allows 3% on the reducing balance on cables, and 5% on the reducing balance on plant and machinery.

The New York Committee on Statistics and Accounts of Public Utility Companies suggested a tentative rate of $3\frac{1}{2}\%$ on the entire fixed capital of electric companies.

ELECTRIC RAILWAYS.—The following is taken from Barker's "Public Utility Rates."

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[27] R. H. Whitten, Vol. II, p. 1189.
[28] *Ibid.*, pp. 1196–97.
[29] *Ibid.*, p. 1203.

Electric Railways	Life in Years	Authority	Cause
Bridges (see Railways)			
Cars	30	B. J. Arnold	D.
Car bodies:			
Open type	25	Chicago Trac. Val. Com.	D.
Closed type	20	" " " "	D.
Trucks	30	" " " "	D.
Motors	5	Wisconsin R. R. Com.	
		H. Floy	D.
Misc. elec. equipment	10–15	Barker	D.
Feeder conduit	30–50	Wisconsin R. R. Com.	O.
Feeders, insulated aerial	10–15	" " "	D.
Overhead construction:			
Trolley wire No. 0, 1 min. headway	2	" " "	D.
Trolley wire, No. 00, 1 min. headway	2½	" " "	D. Reduced
Trolley wire, No. 000, 1 min. headway	3	" " "	25% in size
Single catenary support	15–20	Barker	D.
Double catenary support	20–25	"	D.
Cross spans and brackets	15–20	Wisconsin R. R. Com.	D.
Poles:			
Cedar in earth	14	" " "	D.
Wood in concrete	20	" " "	D.
Iron or steel	40	" " "	D.
Power station equipment (see Electricity-Supply Works)			
Track:			
Tangent	18	" " "	D.
Curves	5	Barker	D.
Special work	5	"	D.
Trestles (see Railways)			

Note: D. denotes depreciation. O. denotes obsolescence.

The New York Public Service Commission for the First District, in 1912, in a case involving an accounting order issued subsequently to the approval of an issue of securities after reorganization, ordered the Third Avenue Railway Co. of New York to reserve at least 20% of its operating revenues for depreciation. A similar requirement was prescribed for the Metropolitan Street Railway Co. Its successor, the New York Railways Co., contested the order. The Commission's order was upheld by the Appellate Division of the Supreme Court, First Department, but on May 4, 1918, the Court of Appeals reversed the lower court on the ground that the order was beyond the power of the Commission. No question was raised as to the reasonableness of the 20% allowance, however.

In the *Chicago Street Railway Assessment Case* (1902), it was ordered that 6% should be deducted as depreciation on cars, tracks, and machinery in order to arrive at net income.

In the *Savannah Street Railway Fare Case* (1912), the Georgia Railroad Commission gave 3% of the total valuation of the physical properties of an electrically operated city and suburban street railway system as a fair and reasonable allowance to cover depreciation and obsolescence.

In the *Columbus, Ohio, Electricity Rate Case* (1906), the special master reports 5% of total cost of plant including real estate, where the real estate is nominal in amount, as a fair depreciation rate.

ELECTROTYPES.—These should be charged monthly as the direct cost of a first printing, and the amount remaining charged to the account should be carefully revised at the close of each fiscal year. A successful book will bear writing off of the entire cost of such plates against the first edition, while if the book is unsuccessful there can be no excuse for retaining such items as assets.

ENGINEERING COSTS.—Engineering Board Memorandum No. 226,[30] incorporated in Interstate Commerce Commission Valuation Docket No. 2 (Texas Midland), reads in part:

"A small portion of the expenditure for engineering is connected with property which depreciates. In view of the fact that the larger portion is expended on location surveys, grading, and other property which does not depreciate, and that the accounting records have been so kept in the past as to make it impracticable to segregate that portion of the expenditure which depreciates, the service-condition per cent of the account shall be considered at 100."

ENGINES.—Dicksee allows from 10% to 12½% for depreciation on engines on the reducing balance.[31] At a conference consisting of representatives of the United States Bureau of the Census, the American Water Works Association, the New England Water Works Association, the American Association of Public Accountants, and others, a uniform system of accounts for water supply systems was adopted in 1911 which assumed the life of engines, pumping machinery, and wood pipes to be 25 years. In a California case, *Spring Valley Water Works* v. *San Francisco*,[32] the district judge found the annual depreciation of pump engines, flumes, and wooden structures to be 2.5% per annum.[33]

ENVELOPE MANUFACTURERS.—The following rates of depreciation have been adopted by the Bureau of Envelope Manufacturers of America:

	Annual Rate of Depreciation %
Steam and power plant	10
Printing presses	10
Platen cutting and creasing presses	10
Die-cutting presses	7½
Straight-knife cutters	7½
Slitters	7½
Solid cutting dies	33⅓
Plunger folding machines	10
Open-end folding machines	10
Panel patching machines	10
Machine gummers	10
Clasp and tension machines	15
Gum-cooking equipment	10
Box department machines	10
Machine tools	10
Electric motors	10
Automobile trucks	25

30 As revised Nov. 6, 1915.

31 H. R. Hatfield, Modern Accounting, p. 142.

32 192 Fed. 137, decided Oct. 21, 1911.

33 R. H. Whitten, Vol. I, p. 430.

	Annual Rate of Depreciation %
Factory furniture and fixtures	10
Office furniture and fixtures	10

Type and electros—will be charged to expense at purchase cost, instead of being capitalized and then depreciated.

FURNITURE AND FIXTURES.—The following is from Nicholson and Rohrbach's "Cost Accounting" (page 151):

	Annual Rate of Depreciation %
Office and Shop Furniture and Fixtures (including store and tool room fixtures):	
Factory equipment	10
Furniture and fixtures	10
Partitions	7½
Watchman's system	7½
Benches, partitions—permanent	7½
Benches	8
Trucks and movable racks	7½
Miscellaneous equipment—including desks, chairs, typewriters, adding and calculating machines, blue-printing machines, filing cabinets and trucks, shelving partitions, time clocks, time detector systems, telephone, electrotypes, graphotypes, etc.	10
Typewriters and adding machines	20
Telephone equipment	7½

The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives 15 years as the life of office furniture.

R. H. Montgomery suggests a rate of 15% per annum as a fair average allowance.[34]

In Jan., 1918, the Rulings Board of the Finance Department of the Bureau of Aircraft Production ruled to allow a rate of 10% per annum for depreciation on furniture and fixtures in determining reimbursements to contractors under cost-plus contracts.[35]

GAS PLANTS.—The following is from Nicholson and Rohrbach's "Cost Accounting":

	Annual Rate of Depreciation %
Engines—gas and oil	7½
Fuel oil system	7½
Oil lines	5
Steel gas-producers, piping, etc.—including gas washers, gas scrubbers, gasometers, dust catchers, and dust collectors	6⅔
Brick gas-producers	6⅔
Gas supply system	6⅔
Gas plant equipment	6⅔

[34] Income Tax Procedure, 1917, p. 213.
[35] General Ruling No. 4.

The following is taken from Barker's "Public Utility Rates":

Gas Works	Life in Years	Authority	Cause
Ammonia concentrators	15	Wisconsin R. R. Com.	D.
Ammonia storage tanks	15	" " "	D.
Blowers	15	" " "	D.
Coal-gas benches	25	" " "	D.
Exhausters	25	" " "	D.
Gas holders	50	" " "	O. & D.
Governors	50	" " "	D. & O.
Mains:			
Small cast-iron (4 in. and under)	50	" " "	O.
Large cast-iron (6 in. and over)	75	" " "	O.
Small steel or iron (3 in. and under)	20	" " "	D'
Large steel or iron (above 3 in.)	30	" " "	D.
Meter cases (station)	50	" " "	O.
Drums (station)	20	" " "	D.
Meters and governors (consumers)	25	" " "	D.
Purifiers	50	" " "	O.
Scrubbers and condensers	30	" " "	D.
Service pipes	20	" " "	D.
Tar and ammonia wells	50	" " "	O.
Extractor	40	" " "	O.
Water-gas machines	30	" " "	D.

Note: D. denotes depreciation. O. denotes obsolescence.

In the *Cedar Rapids Gas Case* (1909), 1.7%, sinking fund method was allowed.[36]

In the *Peoples Gas Light & Coke Co. Case* (1911), 2%, sinking fund method was allowed, the composite life of the plant being 35 years and the earning capacity of the fund 4%.[37]

In a New Jersey case, 6 cents per 1,000 cubic feet of output was allowed for depreciation. The sinking fund method was critized as being "not ordinarily applicable in connection with a property where renewals are being made of the minor portions of the plant."[38] This does not appear to be a vital consideration, however. The fund need not be kept intact. It is realized that a formal fund is not ordinarily practicable, however.

In the *Buffalo Gas Co. Case* (1913), the average life of the gas plant was determined to be 35 years.[39]

In Wisconsin (1912), 2% on reproduction cost new was allowed for depreciation.[40]

The New York Committee on Statistics and Accounts of Public Utility Companies suggested a tentative depreciation rate on the entire fixed capital of gas companies of 3%.

The English Inland Revenue allows 3%, reducing balance method, on gas holders, and 10% on meters, cookers, and gas fires (private).

GAS WELLS.—Consult the Treasury income tax regulations, also the "Manual for the Oil and Gas Industry," issued by the Treasury Department.

GLASSWARE.—The following rates of depreciation have been adopted by the Illuminating Glassware Guild:

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[36] R. H. Whitten, Vol. I, p. 428.
[37] *Ibid.*, p. 429.
[38] *Ibid.*, Vol. II, p. 1197.
[39] *Ibid.*, p. 1198.
[40] *Ibid.*, p. 1203.

	Annual Rate of Depreciation %
Office equipment	10
Buildings:	
Structural steel	5
Concrete	3
Mill construction	3
Ordinary brick	4
Frame	7
Steam-power plant	10
Batch mixers	10
Machinery and equipment	10
Automatic and semi-automatic machinery	12½
Tanks	5
Furnaces	5
Gas producers	10
Automobiles	20

GOOD-WILL.—Formerly, under the income tax rulings no allowance was permitted for depreciation of good-will. This was altered by Treasury Decision 2929, issued Oct. 7, 1919, which was in confirmation of two letters to Levi Cooke, Washington, D. C., one signed by Commissioner Roper and dated June 21, 1919, the other signed by Acting Commissioner J. H. Callan and dated Aug. 19, 1919. Both letters related to obsolescence of good-will, trade-marks, and trade-brands, the value of which had been impaired or destroyed by prohibition legislation. The following is quoted from the letter dated Aug. 19, 1919:

In reply you are advised (1) that distillers and dealers in liquors are entitled to make a deduction (based upon actual cost or fair market value as of March 1, 1913) from gross income, on account of depreciation or obsolescence of their intangibles, such as goodwill, trade-marks, trade brands, etc., such deduction being limited to assignable assets, the value of which has been destroyed by prohibition legislation, and (2) that in arriving at the taxable income for the first taxable year ending on or after January 31, 1918, the obsolescence fully accrued on that date is to be allowed as a deduction in computing the income subject to taxation under the Revenue Act of 1918, plus a further deduction of such proportion of the remaining value of the intangible assets as the interval between January 31, 1918, and the end of the taxable year bears to the total interval between January 31, 1918, and January 16, 1920 (unless at an earlier date the taxpayer discontinues his business, in which case such earlier date shall mark the close of the period), and (3) that for any taxable year following the taxable year just referred to a deduction in respect of the value of such intangible assets on January 31, 1918, based upon a ratable distribution will be permissible.

It is the opinion of the department that the ratification of the 18th amendment in the month of January, 1918, by the states of Massachusetts, Maryland, and Kentucky, was the first definite indication that the prohibition amendment would be ratified by the requisite number of State Legislatures, and therefore that on January 31, 1918, a computable portion of the costs of goodwill, trade-marks, trade brands, or the value thereof, on March 1, 1913, if acquired prior thereto (excluding any intangibles acquired since that date, the expenditures of which were deductible and had been deducted in computing income for tax purposes) had become obsolescent. On January 31, 1918, the intangible assets had an actual value, viz.: the then present value of the income to be derived therefrom between that date and January 16, 1920, or at an earlier date should the taxpayer discontinue his business prior thereto. This value as stated above should be distributed ratably over the period from January 31, 1918, to January 16, 1920 (unless at an earlier date the taxpayer discontinues his business, in which case such earlier date shall mark the close of the period). The excess of the cost of the intangibles or the value thereof, on March 1, 1913, if acquired prior thereto (subject to the exclusions mentioned above), over the

value thereof, as of January 31, 1918, determined as outlined above, will represent the amount of obsolescence that was fully accrued on January 31, 1918.

The existence of good-will by actual purchase should always be a prerequisite to any consideration of its obsolescence or depreciation, whether for income tax purpose or otherwise. Under the Revenue Act of 1917, the Committee on Appeals and Review recommended that "values claimed for 'contracts, brands, and good-will' cannot be allowed as invested capital when it is not conclusivly shown that such values represent paid-in capital," also that "in reorganization no greater value can be given to corporate assets than existed before reorganization, the interest in the corporation being substantially the same as that in the partnership."[41]

In general, accountants have advocated writing down good-will, presumably on theory that purchase price of good-will is based on profits of a number of years less a fair return on invested capital.. Day suggests that interest on capitalization at 7% per annum should be deducted from total profits of past 5 years to secure value of the good-will, and he further states that this amount should be written off over the succeeding 5 years, 1/5 being charged against each year. Dicksee, on the other hand, says that good-will does not depreciate, but that it is liable to continual fluctuations in value. The balance sheet figure represents a value somewhere between the extremes.

Since good-will depends on earning power, its retention in the books after it has been established through a bona fide purchase must depend on earnings. When it appears that earning power has been definitely and permanently curtailed, the Good-Will account should be adjusted to correspond with the new conditions. Evidently no rate can be prescribed where fluctuations in value depend on many factors which only the future can determine.

GRADING.—Grading of railroads may appreciate.[42] In its valuation of the Texas Midland, the Interstate Commerce Commission made no allowance for either appreciation or depreciation.[43]

H. P. Gillette, in "Handbook of Cost Data for Contractors and Engineers" (pp. 1317–78), gives 10% as the annual depreciation.

The Controller of Philadelphia, in his "Manual of Accounting, Reporting and Business Procedure," gives 1% as the rate of depreciation of filling and terracing.

HARDWARE MANUFACTURERS.—The following rates of depreciation have been adopted by a large association of manufacturers. They apply to the manufacture of general hardware, and were furnished by an official of a large hardware manufacturing company.

Depreciation of buildings and equipment should be estimated at the beginning of each year and one-twelfth of the annual amount should be charged monthly as part of the departmental shop expenses. The following annual depreciation ratios, computed on net or reduced values, are recommended:

	Annual Rate of Depreciation %
Buildings—brick or concrete......	3
Buildings—wood................	5
Office furniture and fixtures.......	7
Yard railway....................	5
Elevators......................	5

[41] Committee on Appeals and Review, Memorandum 393.
[42] Interstate Commerce Commission, Valuation Docket No. 2. p. 130 (Texas Midland).
[43] *Ibid.*, p. 184.

	Annual Rate of Depreciation %
Fire apparatus	3
Piping and plumbing fixtures	3
Electric light equipment	3
Power plant	5
Line shafting	5
Furnaces, ovens, stoves, etc	5
Shop furniture	10
Shop fixtures	10
Patterns	15
Foundry flasks	15
Machinery	5
Tools, dies, etc	15

These ratios should be used only where a liberal policy is pursued in the matter of upkeep; that is, where the entire plant is kept always in first class repair, the charges for so keeping it being made to expense accounts 16, 17 and 18, and charged to current expenses and not to betterments.

HORSES.—E. Matheson, an English authority, advocates a rate of from 20% to 30% on the reducing balance.

The Uniform Accounts for Systems of Water Supply, Bureau of the Census (p. 28), gives 10 years as the life of horses.

Horses used in heavy work should be depreciated at about 25% yearly.

F. W. Densham, in the *Accountant*, May 28, 1898 (p. 570), suggests either periodic revaluations or a rate of 15% to 25%, according to the severity of work.

A bulletin issued by the United States Department of Agriculture shows that the average depreciation on 27 farms in Illinois, Ohio, and New York is $4.50 per horse.

L. R. Dicksee suggests that the depreciation will vary between 15% and 25% on the starting balance of the account, but thinks that revaluations should be made until enough experience is secured to enable rates to be fixed intelligently.

The Rulings Board of the Finance Division of the Bureau of Aircraft Production in Aug., 1918, ruled to allow 20% annual depreciation on original cost of horses and mules in arriving at actual cost of manufacture in order to reimburse contractors under cost-plus contracts.

HOTELS.—R. P. Bolton in Building for Profit (p. 76), gives the life of hotels at from 15 to 18 years.

L. R. Dicksee, in "Hotel Accounts," gives rates of 5-7½-10% on furniture and fixtures.

R. H. Montgomery, in "Auditing Theory and Practice," suggests periodic revaluations of china, glass, cutlery, silver, etc.; also suggests as an alternative method regular credits to a reserve account and charges to profit and loss of amounts sufficient to cover the estimated actual renewals and depreciation over a period of years, all renewals to be charged to this reserve account.

J. L. Nicholson and J. F. D. Rohrbach, in "Cost Accounting" (p. 146), suggest 5% as the proper rate for hotels.

F. W. Pixley, in "Accountancy" (2nd ed., p. 219), suggests 2½% on furniture, 15% to 25% on carpets, 10% on electro plate, and 2% to 30% on china and glass.

H. S. Tiffany, in "Digest of Depreciations" (p. 7), gives rates of 2½% to 3½% on brick and stone buildings, and 3½% to 4½% on frame buildings. These are based on actual life and do not include repairs.

ICE INDUSTRY.—The Commissioner of Internal Revenue has approved the following percentages based on original cost to cover "wearout depreciation":

	Annual Rate of Depreciation %
For wooden natural-ice houses and wooden storehouses.....	$6\frac{4}{10}$
Ice houses, harvesting and hoisting machinery, including conveyors, hoists, merrimacs, basin saws, etc., and power plants for same, elevators..........................	$9\frac{1}{2}$
Machinery of steam-driven manufacturing plants*.........	$7\frac{1}{10}$
Machinery of electric-driven manufacturing plants.........	$7\frac{3}{10}$
Frame buildings..................................	5
Brick buildings..................................	$2\frac{1}{2}$
Concrete buildings..............................	2
Horses†...	$15\frac{4}{10}$
Harness...	$16\frac{2}{10}$
Wagons and other horse-drawn vehicles..................	$14\frac{3}{10}$
Automobiles....................................	$22\frac{5}{10}$
Motor trucks....................................	$22\frac{2}{10}$
Sundry delivery equipment..........................	15

In applying the above rates, the Commissioner recommends that the line of demarcation between maintenance and repairs be drawn:

Wear-out depreciation and maintenance are to be separated according to the definition of wearout depreciation, which is that loss of original usefulness which has gone so far as any "Unit of Utility" beyond the ability of repairs to correct, so as to make necessary the complete replacement of that "Unit." By maintenance (synonymous with repairs) is meant the correction of some local defect of a "Unit of Utility" by bringing the defective portion in the easiest way into practical parity with the general condition of the remainder of the "Unit." By the definition of a "Unit of Utility" is meant a single purposed mechanism or part of a construction, subject to such like conditions of use, that it would naturally be repaired or replaced as a unit.

INTANGIBLE PROPERTY.—See "Copyrights," "Good-Will."

LABEL MANUFACTURERS.—The following rates of depreciation have been adopted by the Label Manufacturers National Association, the Folding Box Manufacturers National Association, and the National Association of Employing Lithographers.

	Annual Rate of Depreciation (On Gross Investment Value) %
BUILDINGS:	
Concrete....................................	3–4
Mill construction..............................	4–5
Ordinary brick................................	5–7
Frame.......................................	6–10

* In case of bad water, this figure to be increased up to $7\frac{6}{10}$% as a maximum.

† In case of the Southern States, where a different grade of vehicle and horse is used. these figures become 20% for vehicles.

	Annual Rate of Depreciation (On Gross Investment Value) %
Machinery and Operating Equipment:	
Steam and power plant	5–10
Flat and rotary presses	7½–10
Offset presses	10 –12½
Cylinder cutters and creasers	7½–10
Platen cutters and creasers	7½–10
Cutters, straight and die	5
Automatic gluers	7½
Bronzers	12½–15
Bed, platen, and cylinder embossers	15
Ink grinders	5
Other ink manufacturing equipment	7½–12½
Electro foundry	7½–10
Electros (originals)—charged to jobs, less scrap value.	
Electros (working plates)—charged to jobs, less scrap value.	
Litho stones (originals)	2½ up
Litho stones (for presses)	10
Etc. for other machinery and equipment	Various

LABORATORY APPARATUS AND APPLIANCES.—The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives the life of this as 10 years.

LAND.—Land ordinarily does not depreciate; yet this is by no means to be regarded as a universal rule. Farm lands suffer actual physical deterioration when their fertility is not maintained by means of constant fertilizing by one means or another.

In case of land utilized for building sites, roadbed, and so on, the situation is somewhat different, since fertility is not a factor of importance. In such cases land tends to appreciate in value due to normal community growth, and the element of wear and tear is immaterial.

In a Massachusetts telephone appraisal for rate purposes, in 1909, land was excluded when calculation of depreciation was made.[44] This is the usual rule in valuation cases. In the *Texas Midland Valuation Case*, land which cost originally $67,493.44 was given a present value of $254,479.98.[45]

The Bureau of Internal Revenue, for income tax purposes, does not allow for depreciation of improved or unimproved land if it is caused by ordinary erosion, exhaustion, or any other cause.[46]

Frequently land and buildings are indistinguishably merged into a single account. In such cases the two items should be valued separately and thereafter kept in separate accounts. The cost of land includes: examination costs, title registration fees, conveyancer's and notary's fees, purchasing agent's commissions or salary, taxes accrued to date of title as well as any liens upon the title when these are assumed by the purchaser. Cost of assessments for public improvements which enhance the value of the land, cost of grading not properly chargeable to building, and expenses of condemnation proceedings, may be properly charged to cost of land.

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[44] R. H. Whitten, Vol. I, p. 433.
[45] Interstate Commerce Commission, Valuation Docket No. 2, p. 77.
[46] Income Tax Primer for Farmers, 1921, p. 25.

LEASEHOLDS.—Leaseholds which terminate at a fixed future date, as well as other assets having a definitely fixed time of expiration, must be systematically amortized or written down if capital is to be preserved. These may not depreciate in the strictly material sense of the word, yet the deterioration which takes place is analogous to that which occurs in case of depreciation of other forms of wasting assets. In case of leaseholds, as in case of patents, the period over which the cost must be written off is definitely prescribed.

Leaseholds may be paid for in annual sums, or there may be an initial bonus in addition to the annual sums. Such a bonus should be considered a deferred charge to be distributed over the period covered by the lease.

Leases ordinarily run for any period up to 99 years, but they are sometimes for longer periods. In New York City they are frequently for 63 or 84 years.

When only a periodic rental is paid for the lease, no value appears in the books; but when a bonus is paid, there appears its unamortized value, which should be written off over the remaining period of the lease by means of periodic credits to the leasehold and corresponding charges to Rent account.

LUMBER.—H. S. Tiffany, in his "Digest of Depreciations" (p. 16), gives the following rates for different kinds of lumber:

	Annual Rate of Depreciation %
Ash	10
Hickory	15
Sycamore	25
Beech	12
Poplar	8
Oak (burr and white)	6
Oak (red and black)	12
Cottonwood	12
Walnut	8
Hard maple	6
Soft maple	8
Linn	12
Pine (white or yellow)	5

MACHINERY.—See "Miscellaneous."—The following is from McKay's "Valuing Industrial Properties":

	Life in Years	Authority
Air brakes	20	Henry Floy
Air compressors	20 25	"
Boring mills	28	C. W. McKay
Bench tools (bench lathes, presses, etc.)	15	"
Boring bars and drills (depending upon size, type, and use)	1– 5	"
Belting	12–13	Henry Floy
Boilers	25–33	B. J. Arnold
Boilers	12–16	H. P. Gillette
Boilers (water tube)	20	Henry Floy
Bonds	20	"
Breechings and connections	10–33	"
Chucks (depending upon size, type and use)	5–10	C. W. McKay

	Life in Years	Authority
Coal and ash-handling machinery	14	Henry Floy
Condensers	10–25	"
Electrical machinery	20–30	H. P. Gillette
Engine lathes	25	C. W. McKay
Engines, steam	15–25	H. P. Gillette
Engines, steam	13⅓–33⅓	B. J. Arnold
Engines, steam	20	Henry Floy
Electric light plants, boilers	20	Wm. Arthur
Electric power plants, boiler plant	12	"
Electric power plant, engines and dynamos	20	"
Electric light plant, engines and dynamos	12	"
Feeders (W. P. insulation)	16	Henry Floy
Foundation (machinery)	*	"
Fuel oil handling machinery	25	"
Gates	40–50	H. P. Gillette
Gas engines	15–20	Henry Floy
Generators	12½–33	"
Heaters (water)	16⅔–30	"
Jigs, fixtures	3–10	C. W. McKay
Large drill press	20	"
Meters, electric	20–30	H. P. Gillette
Meters, electric	12½–20	Henry Floy
Motors and electric equipment	20	C. W. McKay
Motors, railway	3⅓–10	Henry Floy
Planers	20	C. W. McKay
Pumps	16–20	Henry Floy
Pumping and auxiliary machinery	20–30	H. P. Gillette
Pumping machinery	20	Wm. Arthur
Reamers	20	C. W. McKay
Railroad machinery	20	Wm. Arthur
Railroad tools	1⅓	"
Railroad telegraph instruments (salvage value 15%)	12–25	"
Railroad telephone instruments (salvage value 8% new)	12–25	"
Railroad interlocking and other signal apparatus	20	"
Railroad section men's tools (average)	8	"
Small lathes	18	C. W. McKay
Small drill presses	18	"
Shapers	18	"
Shafting, pulleys and countershafts	5–10	"
Stokers (fixed parts)	5	Henry Floy
Stokers (moving parts)	20	"
Storage batteries	5– 6⅔	"
Steam locomotives, including tanks (salvage value 5½%)	25	Wm. Arthur
Shop tools and machinery	10	H. P. Gillette
Transformers	16–20	Henry Floy
Turbines (steam and water)	16–30	"

* Same as life of apparatus supported.

The following is from Ficker's "Industrial Cost Finding":

	Annual Rate of Depreciation %
MACHINERY AND LARGE EQUIPMENT:	
Boilers, pumps, feedwater, heaters and air compressors	6
Power piping	6
Switchboards, main wiring and conduit	6
Engines and dynamos	5
Machinery, motors, machine tools, traveling cranes, etc	4–5
Punch presses, bending rolls, power shears and drop hammers	4–5
Machine tool accessories—boring bars, drivers, key seating broaches, etc. (all renewals to repairs)	50
Cupolas, converters, melting furnaces, and accessories	5
Annealing and heating furnaces, ovens, forges, etc.	5
Motor trucks	20
Storage battery locomotives (battery renewals to repairs)	10
Horses and wagons	12
SMALL TOOLS:	
For machines, net additions	50
Hand tools, net additions	50
Punches and dies (standard), net additions	50
Chills, iron and steel flasks and accessories, net additions	50

The following is from Nicholson and Rohrbach's "Cost Accounting":

	Annual Rate of Depreciation %
MACHINERY:	
Machine tools:	
Lathes, slotters, planers, drilling and boring machines; milling machines, tools and surface grinders; emery wheels, keyway cutters, tapping machines, arbor presses, centering machines, squaring machines, hack saws, notching machines, buffing machines, test pumps, pointing machines, metal band saws, belt lacers, saw grinders, etc.; die sinking-machines, car-wheel presses, saw-setting and filing machines, angle-benching machines, cold saw-cutting off machines, etc.	$6\frac{2}{3}$
Gun and tool machinery	6
Cartridge machinery	8
Tool and shop machinery	5
Punches, shears, hydraulic and pneumatic riveters; bending rolls, straightening rolls, straightening presses, bulldozers, joggling machines, flanging machines, frame-setting machines, beveling machines, keel-bending machines, can brakes, etc., forging and upsetting machines	$6\frac{2}{3}$
Punch presses, bending rolls, power shears and drop hammers	$6\frac{2}{3}$
Hydraulic forging presses, bending presses and fluid compressors	$6\frac{2}{3}$
Hammers—steam, drop, or helve	10
Shafting, pulleys, hangers, and belting	5
Belting	7

	Annual Rate of Depreciation %
Wood-working machinery—including band, jig and rip saws, dove-tailing machines, moulding machines, tenoners, mortisers, sizers, wood-boring machines, wood shapers, wood lathes, wood planers, universal wood workers, carvers and moulders, sanding machines, surfacers, swing saws, scroll saws, jointers and wood cut-off saws, embossing press, core box, disc grinders	5
Miscellaneous machinery:	
Locomotive cranes, steam and electric shovels	10
Coal and ash-handling machinery	8
Hydraulic jacks	10
Conveyors—coal, ash and sand, screw conveyors	6
Skip and stock hoists	6
Grinding and mixing machines; crushers, pulverizers, squeezers, scrap shears, concrete mixers, mud guns, jarring machines, tumbling barrels, water cinder mills, sand blast machinery, moulding machines, core-ramming machines, roller feeders, etc.; testing machines, vibrating machines, tie rod machines, welding machines, etc.; magnetic separators, venturimeters, oil meters, fans, gauges, blowers, shaving exhaust system, acetylene generators, oil-testing machines, sand dryers, oiling systems, sewing machines, locking machines, crimping machines, classifiers, thickeners, ball mills, roller feeders, revolving screens, flotation machines, belt-strapping machines, mechanical mixing machines, etc.	10
Pickling washing machines, electric and acetylene welding machines	10
SMALL TOOLS:	
All small tools of an asset nature	10

The following is from Kimbal's "Cost Finding":

	Life in Years
Steam engines	15–30
Steam boilers	15–30
Boiler room feed pumps	20
Engine-room instruments and gauges	10
Steam piping, valves, and fittings	10–15
Portable engines and boilers	10
Gas engines	10–15
Turbo generators	20–30
Electric generators	20–30
Electric motors	20
Storage batteries	10
Switchboards and instruments	15
Heavy machine tools	25
Light machine tools	15–20
Shafting, hangers, and pulleys	20–30
Belting	10–25

When the rate on loose plant and tools would exceed 20% per annum, it is better not to write off an annual percentage. One alternative is to make a rough valuation each year by count or otherwise; another is to charge all costs of maintenance and renewal to income. It may be found desirable to classify this type of assets into groups for accounting purposes.

In the *Chicago Union Traction Case* (1902), 6% was allowed, to determine net earning.[47]

In the Texas Midland valuation the service condition of small hand-tools and other similar property was generally assumed to be 50%. The service condition of machinery and equipment was determined by actual observation, taking into consideration its age and its expected service life.[48]

The English Inland Revenue allows 15%, reducing balance method, on machinery used in steel manufacture.

The General Electric Co. carries a reserve of $21,695,883.32 against a book figure for machinery of $49,262,663.81.[49]

The Rulings Board of the Finance Department of the Bureau of Aircraft Production, in Jan., 1918, ruled to allow 7½% per annum on machinery in determining contractors' reimbursements under cost-plus contracts.[50]

MALLEABLE IRON INDUSTRY.—The American Malleable Castings Association, out of the experience of its members, approves the following rates for the principal kinds of malleable iron foundry buildings and equipment.

	Annual Rate of Depreciation %
Buildings:	
Concrete	2½
Brick	3
Sheet-iron	10
Melting department equipment:	
Melting furnaces and apparatus	7½
Spruce mill and slag washer	15
Laboratory equipment	10
Crane	10
Molding department equipment:	
Hand squeezers	15
Air molding machines	20
Core department equipment:	
Core ovens and apparatus	7½
Core machines	15
Sand mixer	20
Benches, racks, trays, trucks	10
Hard-iron cleaning department equipment:	
Tumbling barrels, with motor, shafting and belting	15
Sand blast barrels and tables, motor shafting and belting	30
Dust arrester	10

[47] R. H. Whitten, Vol. I, p 424.
[48] Interstate Commerce Commission Valuation Docket No. 2, p. 86.
[49] Twenty-ninth Annual Report, p. 6.
[50] General Ruling No. 4.

	Annual Rate of Depreciation %
Finishing department equipment:	
Emery-wheel stands, drop hammers, lathes, drill presses, air choppers, milling machines, threshing machines, etc., with motor, shafting and belting	10
Assorting and shipping department equipment:	
Sorting tables, trucks, scales, etc.	10
Automobile trucks	20
Trimming and inspecting department equipment:	
Benches, scales, trucks	10
Emery-wheel stands, with motor, shafting and belting	10
Annealing department equipment:	
Annealing ovens and apparatus	10
Annealing trucks	20
Crane	10
Soft-iron cleaning department equipment:	
Tumbling barrels, with motor, shafting and belting	15
Sand blast barrels and tables, motor shafting and belting	30
Dust arrester	10
Power plant equipment:	
Steam boiler, generator, air compressor, steam piping, electric wiring, etc.	7½
Office furniture and fixtures	10

Experience has proved these rates to be conservative, and it is very doubtful if the member who is not providing for depreciation at substantially the rates noted above is fully maintaining his plant values.

The amount provided to represent the deterioration in plant and equipment values due to wear and tear and obsolescence should be charged monthly to cost of production and credited to Buildings and Equipment Depreciation Reserve accounts. Against the reserve accounts should be charged all expenditures of the nature of complete renewals and replacements which to that extent restore plant values and reduce the accrued depreciation.

Current repairs and partial renewals of an inextensive nature should be charged directly to cost of production.

MASONRY.—The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives 50 years as the life of masonry of filtration plants.

In the Texas Midland valuation 100 years was taken as the normal life of concrete and other masonry.[51]

MINE EQUIPMENT.—In a synopsis of a report made by the committee on cost of the Winding Gulf Association, published in *Coal Age*, Sept. 19, 1918 (pp. 545 7), the following rates of depreciation based on original cost were recommended:

	Annual Rate of Depreciation %
STRUCTURES:	
Wooden tipples, complete	8
Steel tipples, complete	5
Wooden power house (building)	7
Stone or brick power house	5
Machine shop—wood	8

[51] Interstate Commerce Commission Valuation Docket No. 2, p. 184.

	Annual Rate of Depreciation %
Machine shop—stone or brick	5
Supply house—wood	8
" " —stone or brick	5
Blacksmith shop—wood	8
" " —stone or brick	5
Stable building—wood	8
" " —stone or brick	5
Churches and schools	4
Squire's office and jail	4
Sand houses	4
Post-office building	4
Substation—wood	7
" —stone or brick	5
Humidifier building—wood	7
" " —stone or brick	5
Powder house—concrete, stone or brick	10
Wash house—wood	10
" " —stone or brick	5
Fireproof vaults	4
Freight stations	10
All other small buildings	10
MINE DEVELOPMENT:	
Clearing property	5
Creek changes	5
Wa on roads	5
Slopes and shafts	5
Diamond and drill holes	5
Train roads	20
Mine development	10
EQUIPMENT:	
Dynamos and engines	8
Boilers	11
Pumps, heaters, and other power house equipment	8
Header lines	8
Fans	5
Water tanks	7
Railway sidings and approaches	7
Humidifiers	12½
Telephone lines	10
Sawmills	10
Hoists	7
Incline drums and larries	10
Incline ropes	33⅓
Cage ropes	50
Hoist engines	7
Mine telephones	20
Mine pumps	20
Steel rail	10
Mine wagons (cars)—wood	20
" " " —steel	17

	Annual Rate of Depreciation %
Mine locomotives	10
Mining machinery	20
Electric drills	20
Stable equipment	25
Patent mine doors	20
Copper wire	7
Supply house fixtures	10
Post-office equipment and fixtures	7
Fire equipment	20
Air compressors	8
Good roads machinery	10
Shop fixtures and machinery	7
Stationary motors	7
Watchmen's clocks	10
Pipe lines in mines	33⅓
Barber shop fixtures and barber shop	10
MISCELLANEOUS BUILDING AND FIXTURES:	
Theater building	6
Theater building fixtures	6
" " and poolroom	20
Store and office buildings—wood	6
" " " " —stone or brick	5
Furniture and fixtures in same	10
Tenement houses	6
Clubhouse furniture	15

MISCELLANEOUS.—The following is from McKay's "Valuing Industrial Properties":

	Life in Years	Authority
Arc lamps	15	Henry Floy
Box drains	16	H. P. Gillette
Bolts and nut locks	20	Wm. Arthur
Brick platforms and walks	33	"
Bridges:		
Steel	50	"
Concrete and stone	50	"
Wood	8–28	"
Cinders and sand for ballast	6½	"
Cast iron pipe of large diameter	50–75	H. P. Gillette
Cast iron pipe of small diameter	20–40	"
Cribbing and bulk heading	10	"
Cement platform and walks	33	Wm. Arthur
Concrete curbing	20	"
Curbings, wood	20	"
Cinder and gravel platforms and walks with no curbing	22	"
Cinder and gravel platforms and walks with wooden curbing	12	"
Coach and chair cars (salvage value 6% new)	25	"

	Life in Years	Authority
Cables:		
Cables, underground (low tension) (50% of maintenance cost)		Henry Floy
Cables, aerial (telephone)	15	C. W. McKay
Aerial cable (lead covered)	15	Wm. Arthur
Underground (lead covered)	20–25	"
Conduits	100	Henry Floy
Conduits	50	C. W. McKay
Cross arms	8–12	Henry Floy
Culverts:		
Wooden box	10	Wm. Arthur
Cast iron pipe	50	"
Vitrified pipe	20	"
Cement pipe	50	"
Concrete and stone	50	"
Crushed stone and granite ballast	50	"
Docks and wharves	33	H. P. Gillette
Electric light plants, incidental apparatus	12	Wm. Arthur
Electric power plants, incidental apparatus	12	"
Fencing:		
Wooden entirely	15	"
Wooden posts, wire panels	20	"
Cement and iron posts, wire panels	22	"
Fences	14	H. P. Gillette
Frogs—railroad track	32	Wm. Arthur
Gravel and burned clay ballast (Nebraska and similar products)	20	"
Hand cars	14	"
Hydrants	40–50	H. P. Gillette
Howe truss bridges	10	"
Poles and attachments for electric transmission	20	Wm. Arthur
Paving	2	Henry Floy
Paving	2	C. W. McKay
Piping covering	22–25	Henry Floy
Poles:		
Steel	50	"
Wood in concrete	20	"
Wood in earth	12–18	"
Iron	40	"
Wooden	10	Wm. Arthur
Rail	4–10	"
Reservoirs	50–100	H. P. Gillette
Rails, track fastenings, etc	40	"
Rolling stock:		
Open-car bodies	25	Henry Floy
Open-trailer bodies	25	"
Closed-car bodies	20	"
Trucks	20–28	"
Passenger cars (express, baggage, and mail—salvage value 8%)	25	Wm. Arthur
Freight cars	18	"

	Life in Years	Authority
Shop furniture	10	C. W. McKay
Stand pipes	50–100	H. P. Gillette
Steel pipe	25-50	"
Switchboard and wiring	16¼–33⅓	Henry Floy
Spikes	12	Wm. Arthur
Split joints and attachments	19	"
Tunnels (all kinds)	20–50	"
Telephone and telegraph poles and pole attachments	20	"
Telephones	10	Henry Floy
Ties for new track:		
Oak (white)	12	Wm. Arthur
Oak (mixed)	7	"
Fir and pine	6	"
Cedar	12	"
Tamarac	8	"
Hemlock	6	"
Cypress	6	"
Water tanks:		
Wooden	20	"
Steel, including water softeners	33⅓	"
Galvanized iron	10	"
Wind mills	8	"
Wire for telephone and telegraph	25	"
Wire, electric transmission	20	"
Wood stave pipe	25–30	H. P. Gillette
Wrought iron service pipe	15–30	"
Wood sidewalks	12	Wm. Arthur

PAPER MILLS.—The English Inland Revenue permits as maximum rates, 5% reducing balance method for machinery working during the day only, and 7½% for machinery working both night and day.

R. H. Montgomery in "Auditing, Theory and Practice" (1916, p. 418), says that buildings should be depreciated at a very low rate, and equipment at from 3% to 5%. In his "Income Tax Procedure, 1919" (p. 571), he suggests 7½% for machinery running night and day.

The Federal Trade Commission has found that several of our best managed mills allow 5% on their investment, which figure the Commission has adopted as adequate.

H. S. Tiffany, in his "Digest of Depreciations," gives 2½% for brick buildings, and 3½% for frame buildings.

PATENTS.—The following table gives terms of patents and of trade-marks in leading countries:

Country	Term of Patent	Term of Trade-Mark
Great Britain	16 yr.; extended from 14 yr. by act of Parliament, 1919	14 yr. renewable
France	5, 10, or 15 yr. from filing of application	15 " "
Germany	15 yr. from next day after filing	10 " "
Russia	15 "	1 to 10 yr.

Country		Term of Patent	Term of Trade-Mark
Canada	18 "		General unlimited; special 25 yr. renewable
Australia	14 "		14 yr. renewable
Austria	15 "		10 " "
Switzerland	10 "	for chemical process	20 " "
	15 "	from filing	
Sweden	15 "	from filing.	10 " "
Denmark	15 "		10 " "
United States	17 "		20 " "

The duration of patent rights in Great Britain was extended from 14 to 16 years in 1919 (see 9, and 9 and 10, Geo V, c 80 Chitty, Annual Statutes, 1919, p. 423). No corresponding change seems to have been made with respect to trade-marks. Important patent legislation is now pending in France which will radically change the existing law if passed.

The only actual change in duration of patents and trade-marks since 1909 in the countries named seems to have been in Great Britain, as indicated above.[52]

PATTERNS.—L. R. Dicksee suggests a rate of from 25% to 33⅓% for patterns. E. Guthrie suggests 50% the first year, 30% the second, and 20% the third year for designs; and 20% to 30%, reducing balance method, for patterns. R. H. Montgomery says the depreciation charge should usually equal the annual expenditure for new patterns, and that, wherever possible, the total book value should be written down to $1.[53] This policy is pursued by the General Electric Co., which carries patterns which cost nearly $2,000,000 at a net book valuation of $1. C. Piez suggests a rate of 75% on new additions to metal patterns, and a rate of 100% on new additions to wood patterns. J. L. Nicholson and J. F. D. Rohrbach, in "Cost Accounting" (p. 151), suggest the same rates. C. E. Woods suggests a rate of from 33⅓% to 100% per annum.[54]

In general, when patterns are made for a specific order they should be charged wholly to that order, but when they are made for a stock product their future value depends on various considerations.

PIPE.—Cast iron.—In *Spring Valley Water Works* v. *San Francisco*,[55] the district judge found the depreciation of cast iron pipes to be 1% per annum.[56]

Service.—The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives the life of service pipe as 15 years.

Steam.—The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives 20 years as the life of steam pipes.

Wood.—The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives the life of wood pipe as 25 years.

Wrought iron.—In *Spring Valley Water Works* v. *San Francisco*,[57] the district judge found the annual depreciation of wrought iron pipes to be 2%.[58]

The Uniform Accounts for Systems of Water Supply, Bureau of the Census, gives 50 years as the life of iron water pipes.

For much additional data on depreciation of pipes, see "Accountants' Index" (1920, pp. 546-554.)

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[52] Office Decision 721, Bureau of Internal Revenue.
[53] Income Tax Procedure, 1919, pp. 573–575, Supp. 1142–43.
[54] Unified Accounting Methods for Industrials, p. 65.
[55] 192 Fed. 137, decided Oct. 31, 1911.
[56] R. H. Whitten, Vol. I, p. 430.
[57] 192 Fed. 137, decided Oct. 21, 1911.
[58] R. H. Whitten, Vol. I, p. 430.

POWER PLANT.—Foster, in his "Engineering Valuation of Public Utilities and Factories" (pp. 200, 205), gives the following for power plant and substation equipment:

	Annual Rate of Depreciation %
Engines, boilers, heaters, conveyors, pumps, and auxiliaries.	4.5
Rotaries, transformers, switchboards, auxiliaries............	4.5
Storage batteries..	3.0
Turbines and generators....................................	6.0

R. H. Montgomery suggests a rate of 8% for power plant equipment, based on gross book values at end of the preceding year.[59]

M. E. Cooley gave a life of 12½ years to power plant equipment in the *Milwaukee 3-Cent Fare Case.* In the same case, M. G. Starrett gave 20 years as the life of equipment.[60] The Commission accepted 21.01 years.

C. E. Woods gives 10% per annum for power plant.[61]

PRINTING.—The United Typothetae of America, in their Treatise on the Standard Accounting System for Printers (p. 40), give:

	Annual Rate of Depreciation %
Type..	25
Hand composition fixtures.....................	10
Machines......................................	10
Machine composition metal:	
Linotype....................................	2
Monotype....................................	3

The manager of the Philadelphia Printers' Board of Trade says that progressive printers regard depreciation in the composition room as not less than 20%, and of machinery, stands, furniture, etc., 10%. However, many printers make a flat rate depreciation charge of not over 10%, and some go as low as 5%.

The English Inland Revenue permits the following maximum rates on the reducing balance:

	Annual Rate of Depreciation %
Engines, boilers, and shafting..................	5
Printing and binding machines...................	7½
Type..	10

PUBLIC UTILITY COMPANIES.—See "Electric Plants," "Gas Plants," "Telephone Companies," and "Water Works."

Many states now have laws making depreciation reserves compulsory on the part of utility companies. The following quotation from the report of the New York Committee on Accounts and Statistics of Public Utility Companies indicates the tendencies:

> It thus appears that in 15 states there are special enactments requiring the utilities to maintain depreciation reserves or conferring authority upon the supervisory body to make such requirement. Seven additional states have exercised such authority as a matter of

[59] Income Tax Procedure, 1919, p. 563; also 1920, p. 716.
[60] Report of Wisconsin Railroad Commission, Vol. X, p. 226.
[61] Unified Accounting Methods for Industrials, p. 65.

accounting just as the Interstate Commerce Commission has done, without any other or further authority than to regulate accounting procedure. These 22 states embrace most of those that supervise the purely local utilities like gas, electric and water companies. In 16 other states telephone and electric railway companies are subject to the requirement, either under federal or state regulations, while only 9 states (besides Delaware and Utah, which have no state commissions) have not taken action so far as the Committee has information, namely, Connecticut, Georgia, Kansas, Nevada, North Carolina, Oklahoma, Vermont, West Virginia and Wyoming. Certain of these states have no authority to regulate accounting practices; others report that accounting classifications are in course of preparation.

. . . .

In most cases the statutes go beyond the mere requirement of a depreciation account in that they confer power on the commission to fix the rates of depreciation and require the companies to expend the moneys reserved for depreciation under regulations prescribed by the commission.

A review of the action taken by the commissions under these statutes indicates that they are proceeding with caution in establishing rates, and regulations as to the use of depreciation funds. In nearly every state orders have been issued only after thorough investigation in individual cases involving the determination of rates or the approval of security issues. Both the straight-line method and the sinking-fund method of computing depreciation are used —the former in nearly all cases in which reproduction-cost or "value of property" is used as the rate-base and the latter in many cases in which investment is taken as the rate-base.

The following quotation from the laws of New Jersey is typical of state legislation of the compulsory type:

Sec. 17. The board shall have power, after hearing, upon notice by order in writing to require every public utility as herein defined: (f) To carry, whenever in the judgment of the board it may reasonably be required, for the protection of stockholders, bondholders or creditors, a proper adequate depreciation account in accordance with such rules, regulations and forms of account as the board may prescribe. The board shall from time to time ascertain and determine and by order in writing after hearing fix proper and adequate rates of depreciation of the property of each public utility, in accordance with such regulations or classifications, which rates shall be sufficient to provide the amounts required over and above the expense of maintenance to keep such property in a state of efficiency corresponding to the progress of the industry. Each public utility shall conform its depreciation accounts to the rates so ascertained, determined and fixed, and shall set aside the moneys so provided for out of earnings and carry the same in a depreciation fund. The income from investments of moneys shall not be extended (sic) otherwise than for depreciation, improvements, new constructions, extensions or additions to the property of such public utility.

RADIUM.—The Treasury Department has ruled as follows:

Since the full life of radium has been scientifically estimated at such an extended period and since no appreciable depreciation results from its continued use as a therapeutic agent, the depreciation occurring during the lifetime of any individual owner is practically negligible. It is held, therefore, that radium which is used as a therapeutic agent is not subject to depreciation for income tax purposes and its cost must be treated as a capital expenditure. The return of capital will be realized upon its sale or other disposition.[62]

RAILROADS.—The following is from Barker's "Public Utility Rates":

Railways	Life In Years	Authority	Cause
Bridges:			
Steel	20–50	Barker	O.
Wood	10	"	D.
Buildings:			
Office, masonry	70	"	O.
Dwelling, etc.,—wood-frame	30	"	O. or D

[62] Office Decision 837, 10-21-1496.

Railways	Life In Years	Authority	Cause
Stations, masonry	40	Barker	O.
Wood	20	"	O.
Shops, first class	75	Wisconsin R. R. Com.	O.
Second class	50	" " "	D.
Sheds—wood-frame	20	Barker	D.
Cars:			
Freight—wood	10–20	"	D.
Steel	15–30	"	D.
Passenger—wood	20–25	"	O.
Steel	25–30	"	D.
Dining, parlor and sleeping —wood	15–20	"	O.
Steel	20–25	"	O.
Locomotives:			
Freight	15–20	"	D.
Passenger	15–20	"	D.
Switching	20	"	D.
Signals	30	"	O.
Track:			
Rail, main-line tangent	2– 8	"	D. & O.
Main-line curve	1– 5	"	D. & O.
Sidings and yards	10–20	"	D.
Ties—ordinary light wood	5–10	"	D.
Ordinary hardwood	10–15	"	D.
Treated and protected	30	"	D.

NOTE: O. denotes obsolescence. D. denotes depreciation.

The following rates are given by H. L. Gray, in "*Railway Age Gazette,*" May 27, 1910 (pp. 1297–98, 1290), July 8, 1910 (p. 66).

A fair average allowance for depreciation would be:

	Per Cent
Of the cost of property subject to depreciation	5½
" " " " " on electric roads	6½
" " " " " on street railways	5

The following table is used for the state of Washington:

	Annual Rate of Depreciation %
Ballast	8
Ties	15
Rails (main track)	3
Fastenings	5
Frogs and switches	7
Plank paving	8
Track laying	5
Timber tunnel lining	8
Combination bridges	6
Howe truss bridges	9
Pile and frame bridges	10
Wooden culverts	10
Crossings and signs	8

	Annual Rate of Depreciation %
Fences and cattle-guards	8
Telephone and telegraph instruments	6
Poles and fixtures	8
Covered copper feeder	2
Trolley wire	5
Rail bonds	3
Brick buildings	2
Frame buildings	3
Shop machinery	6
Water and fuel stations	4
Roadway tools	10
Interlocking and signal apparatus	7
Substation apparatus	5
Furniture and fixtures	3
Storage batteries	15
Passenger cars (steam)	3
Passenger cars (electric)	5
Freight cars (steam)	4
Freight cars (electric)	4
Steam locomotives	3
Electric equipment of cars	5

In the Texas Midland valuation the life of rails was taken as 40 years.[63]

A study of the rail of the Texas Midland Railroad led to the conclusion that any rail in main-line track could be expected to have a total life of 40 years as new rail before becoming relay; that new rail laid in side tracks could be expected to have a life of 100 years before becoming scrap; and that relay rail would have a life of 60 years before becoming scrap.[64]

The following is quoted from Bulletin of the Investment Bankers Association of America:

Depreciation of Equipment.—The figures furnished by different roads as to the amount charged for depreciation of equipment show a wide variation, and in a great majority of cases, in our opinion, grossly inadequate. We are taking steps that we hope will result in improving this condition. (Vol. IV, p. 96.)

Or again, **accrued depreciation,** which is provided for out of operating expenses, is an accumulative fund of which perhaps 90% is set aside for equipment. But suppose a road with \$60,000,000 of equipment on the rails, \$20,000,000 of equipmemt trusts outstanding, and accrued depreciation of \$30,000,000 —there is no way at present of ascertaining whether the \$30,000,000 has been applied only to the unpledged cars or not, or what specific sum, if any, has been set aside for any particular series of rolling stock in which the banker may have had a selling interest. (Vol. II, No. 4, p. 38.)

The private banking firms handling Equipments all insisted that some provision should be made to provide greater safety for the investor in this class of Security. During the last year a number of situations have come to notice where, when a road has got into financial difficulties, we have found that the equipment pledged under Equipment Trusts has become so depreciated in value as to seriously impair the Security of the Equipment Trust issued against it. When cars were lost or destroyed new equipment has not been added. New equipment has been bought through the issue of new Equipment Trusts instead of money being spent in keeping equipment already owned in proper repair, a more favorable statement of net earnings resulting thereby. Even in an extreme case the actual maturing obligations have been bought in by the Railroad and kept alive instead of being retired and paid off. The fundamental theory of an Equipment Trust by which

63 Interstate Commerce Commission Valuation Docket No. 2, p. 52.

64 *Ibid.*, pp 82–83.

the paying off of a portion of the Trust each year should take care of the depreciation of said equipment, and the Security of the Trust maintained, has thus been violated.

RESERVOIRS.—Most authorities give the life of reservoirs as ranging from 50 to 100 years.

The Uniform System of Accounts for Systems of Water Supply, Bureau of the Census, gives the life of reservoirs, tunnels, and aqueducts as 100 years.

Leonard Metcalf gives 50 to 100 years; C. B. Burdick, 100 years; the California Railroad Commission, 100 years.

RETAIL TRADE.—Ordinarily stock on hand is not supposed to depreciate; yet, while no formal allowance for depreciation thereon is permitted by the Bureau of Internal Revenue, there is a material shrinkage in inventory values which is reflected in the current income account as the result of price reductions made in order to enable merchants to dispose of merchandise which has become shopworn.

R. H. Montgomery gives the shrinkages for retail and department stores, in "Auditing, Theory and Practice" (1916, p. 622), as follows:

	Annual Rate of Depreciation and Shrinkage %
Jewelry	.95
Retail clothing	1.16
Drugs	.47
Department store	1.61
Furniture	2.14
Mail order	.12
Shoes	.50
Vehicles and implements	.62
Dry goods	1.11
Hardware	.52
Variety	.06
Grocery	.76

H. S. Tiffany, in his "Digest of Depreciations" (pp. 13, 16, 17), gives the following:

	Annual Rate of Depreciation %
Dry goods	12½
Wholesale	12½
Retail	25
Wooden and willow ware	10
Queensware	5

also the following (at page 18) for stocks in retail stores:

	Annual Rate of Depreciation %
Boots and shoes (depreciate annually)	15
Clothing (depreciates first year)	20
Clothing (depreciates second year)	30
Dry goods (depreciate annually)	15
Groceries (depreciate annually)	10

	Annual Rate of Depreciation %
Hardware (depreciates annually)	15
Hats and caps (depreciate annually)	20
Laces (depreciate annually)	25
Notions (depreciate annually)	25
Queensware (depreciates annually)	10
Ribbons (depreciate annually)	25
Soap (depreciate annually)	5
Straw goods (depreciate annually)	50
Woolen and willow ware (depreciate annually)	15
Miscellaneous goods (depreciate annually)	20

ROLLING STOCK.—Marwick, Mitchell & Co. gave 20 years as the life of cars, including all equipment in the appraisal of a large street railway system.

In the *Milwaukee 3-Cent Fare Case*, Professor M. E. Cooley gave 12.5 years, W. D. Pence gave 15 to 20 years, M. G. Starrett gave 16.7 years, as the life of cars, bodies, and trucks.

The Wisconsin Railroad Commission has accepted 15 years as the life of car bodies and equipment.

B. J. Arnold, in four Chicago appraisals, stated the life of electrical equipment as 3.3 to 4 to 8.5 years.

Stone and Webster, in a Chicago Traction Case gave the life of electrical equipment as 11.75 to 15 years.

Henry Floy in the Third Avenue Case (New York) gave the life of trucks as 20 years.

The Traction Valuation Commission, Chicago Consolidated Traction Co., gave life of trucks as 30 years.

Marwick, Mitchell & Co. in the appraisal of a large street railway system placed the life of utility equipment at 20 years.

For additional data see "Accountants' Index" (1920, pp. 583–88).

SAWMILLS.—The English Inland Revenue allows the following percentages on the reducing balance method:

	Annual Rate of Depreciation %
Engines, boilers, and main shafting	5
General saw-milling plant and machinery	7½
Traction engines, tractors, motor cars, and haulage plant	20

R. H. Montgomery gives a general rate of 6⅓%.[65]

H. S. Tiffany gives 3½% to 4½% for frame sawmills having steam power, and 2½% to 4½% for those having water power.

The Uniform Cost Sheet for Coal Mining Companies, *Coal Age*, Sept. 19, 1918 (pp. 545–47), gives 10% on original cost for sawmills.

SHIPBUILDING.—The following data are from the table of rates of depreciation recommended by the committee on depreciation of the Atlantic Coast Shipbuilders' Association, Dec. 11, 1918, in its "Cost Accounting and Shipbuilding" (pp. 48–50):

Recommended that the straight-line method of charging off depreciation be adopted. That the normal rates of depreciation be increased to cover overtime depreciation, this

[65] Income Tax Procedure, 1920, p. 724.

increase being at a rate of 6¼% of the normal rate for each hour of overtime; all time in excess of the standard eight-hour day being considered overtime, in this connection. This rate of increase corresponds to 100% increase in normal rates when the plant is operated for the full 24 hours.

General Classification	Life in Years	Annual Rate Depr.
Buildings:		
Stone, brick, concrete with or without steel frame and masonry curtain wall buildings	30	$3\frac{1}{3}$
Steel with corrugated sheet iron or steel plate	20	5
Steel or corrugated sheet iron with wood	15	$6\frac{2}{3}$
Power plant buildings	20	5
Wood buildings	10	10
Piers, bulkheads, wharves and docks	20	5
Launching ways (fixed structure) wood	10	10
Concrete	$13\frac{1}{3}$	$7\frac{1}{2}$
Water tanks and steel stacks	15	$6\frac{2}{3}$
Drydocks, basin, masonry or concrete	40	$2\frac{1}{2}$
Wood	25	4
Concrete and brick bins, fences and miscellaneous concrete and brick structures	20	5
Wood bins, fences, racks and other wood structures	5	20
Power Machinery:		
Electric generators, switchboards, and power house equipment: boilers and boiler house equipment, including economizers feed water heaters, injectors, stacks, uptakes, etc.	15	$6\frac{2}{3}$
Engines, gas and oil	$11\frac{3}{4}$	$8\frac{1}{2}$
Engines, steam, including pile drivers, hoisting engines, compressors, air pumps, vacuum pumps, etc.	10	10
Pumps, water supply, feed water, fire, etc.	18	$5\frac{1}{2}$
Electric motors and controllers	$11\frac{3}{4}$	$8\frac{1}{2}$
Coal and ash conveyors	20	5
Shop Machinery:		
Hydraulic forging presses, bending presses and fluid compressors	30	$3\frac{1}{3}$
Hammers, steam drop or helve	10	10
Machine tools, lathes, slotters, planers, boring mills, drilling, boring and milling machines	15	$6\frac{2}{3}$
Miscellaneous shop machinery and equipment, including small scales, spare parts, etc.	5	20
Woodworking machinery	20	5
Small tools	10	10
Cranes, Elevators, etc.:		
Cranes, electric, hydraulic, steam and hand power, jib and davit; hand, electric or air hoists, derricks, lifting magnets and charging machines	15	$6\frac{2}{3}$
Locomotive cranes, steam and electric	10	10
Elevators	20	5
Craneways	25	4
Portable pneumatic, electric and hydraulic tools; portable, hand, electric, hydraulic or pneumatic hoists and lifting devices; small jib cranes	3	$33\frac{1}{3}$

General Classification	Life in Years	Annual Rate Depr. %
Furnaces and Forges:		
Heating, treating and annealing furnaces, brass foundry melting furnaces, oil furnaces, etc.	10	10
Blast furnaces, stacks and stoves, soaking pits, open hearth and crucible melting furnaces, cupolas, etc.	25	4
Formers and drop forge dies	5	20
Other Equipment:		
Railroad tracks, including rails, ties, ballast, excavation, grading, etc.	22	4½
Trestles, steel	25	4
Wood	15	6⅔
Bridge and retaining walls	33⅓	3
Marine railways	30	3⅓
Fire systems and apparatus	5	20
Piping and wiring; piping for steam and exhaust, air, oil, gas and water lines, pneumatic and hydraulic transmission, electric light and power systems, wiring, feeder and other outside wiring, including poles	16⅔	6
Heating and ventilating systems, drying apparatus	20	5
Sanitary and water supply systems, sewers and drainage systems	25	4
Floating equipment, barges, boats, scows, motor-boats	5	20
Portable launching ways	5	20
Floating drydocks	20	5
Stable and garage equipment	3	33⅓
Motor trucks and automobiles	3	33⅓
Locomotives, steam and electric	15	6⅔
Cars used by transportation department	10	10
Scales, large	10	10
Water purifier	15	6⅔
Pickling tanks, etc.	3	33⅓
Furniture and Fixtures:		
Office equipment, shop, yard, store and tool room fixtures, typewriters, adding machines, etc., lockers, wardrobes, etc.	5	20

SHIPS.—The Federal Income Tax Department of Australia has allowed the following rates, reducing balance method. Repairs are allowed in addition.

	Annual Rate of Depreciation %
Launches	6
Ships	6
Steamers	6
Lugger	7½
Lighters—wooden, for conveyance of gaseous liquor	6
Coal	10
Constructed of iron or steel	6
Punts	6

J. D. S. Bogle gives the average life of steamers as about 20 years, and considers 6% to 7% a fair rate of depreciation.

The following rates are provided by large companies:

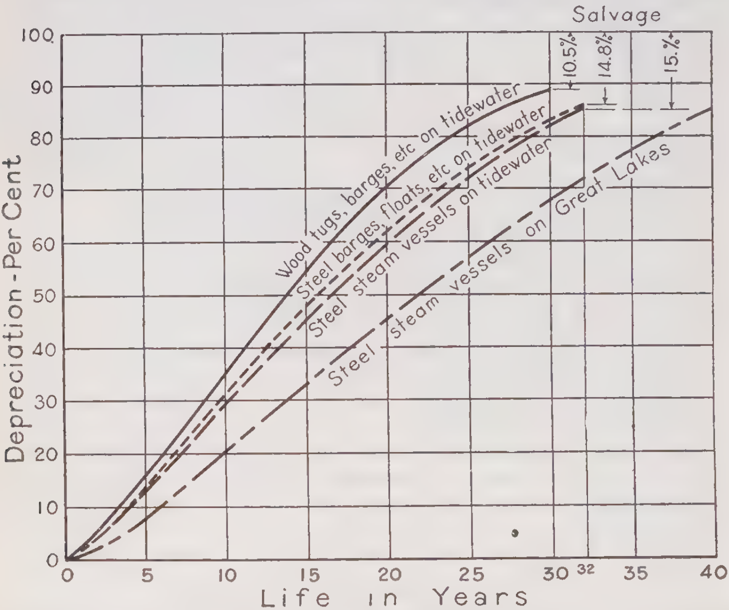
P. and O. Co. writes off 5%; also carries sums to suspense account.

Houlder, Ltd., under trust deed must provide 5%.

Cunard Line provides nearly 5%.

Royal Mail S. P. Coy provides slightly more than 5%.

The Hamburg-American Co., during the period 1903–1913, allowed on an average of $4.11 per ton per annum for depreciation. For the same



Form 9. Chart showing Rate of Depreciation of Vessels on the Great Lakes and Tidewater

period the International Mercantile Marine Co. made the inadequate average allowance of $2.35 per ton.[66]

The Royal Mail Packet Co. in 1914 allowed slightly more than 5% on first cost.

The White Star Line in 1914 allowed 4% on original first cost and betterments, a comparatively low allowance.

The diagram in Form 9, reproduced from Gillette and Dana's "Handbook of Mechanical and Electrical Cost Data," shows the life and manner of depreciation of vessels on the Great Lakes and tidewater.

The English Inland Revenue allows as maximum rates 4% on the prime cost of steamships, and 3% on the prime cost of sailing vessels. With regard

[66] E. A. Saliers, in *Journal of Political Economy*, Vol. XXIII, p. 917.

to ships bought second hand at prices in excess of the written-down value at the date of purchase, the following arrangements have been made:

(a) The allowance is made on the actual cost price of the ship to the owner for the time being without regard to the prime cost to a previous owner.

(b) The rate of depreciation allowable is calculated by reference to the reasonable expectation of the life of the ship at the date of purchase from the previous owner.

During the war the United States Shipping Board allowed 10% for depreciation on an inflated valuation of commandeered vessels of approximately $175 per ton, which was more than twice their original cost.

At a conference of the president of the Ship Owners' Association of the Pacific Coast, professional accountants representing that association, and officials of the Bureau of Internal Revenue, it was agreed that the proper annual rate for steam schooners engaged in the coastwise lumber trade is 5%, based upon an expected life of 20 years.[67]

STEAM PLANTS.—The following is from Nicholson and Rohrbach's "Cost Accounting":

	Annual Rate of Depreciation
STEAM PLANT EQUIPMENT:	%
Steam power plant, including boilers and piping	6
Boilers	5
Boilers—including boiler house equipment, such as economizers, feed water heaters, injectors, damper regulators, etc. (does not include feed water pumps)	5½
Water purifying plant	5½
Engines	5
Steam turbines	5
Condensers	6
Piping	7½
Superheaters	5
Stokers—fixed parts	5
Stokers—moving parts	20

TELEPHONE COMPANIES.—The following is from Barker's "Public Utility Rates" (1917, p. 369):

TELEPHONE UTILITIES	Life in Years	Authority	Cause
Buildings	40	Chicago Tel. Com.	O.
Cables:			
Lead-covered aerial	12	Wisconsin R. R. Com.	D. & O.
Lead-covered under-ground	20	" " "	O. & D.
Central exchange equipment	10	" " "	O. & D.
Conduit	50	Chicago Tel. Com.	O.
Cross arms	8–12	Wisconsin R. R. Com.	D.
Furniture and tools	7	" " "	D.
Poles, wood in earth	12–15	" " "	D.
Power plant	8	" " "	D. & O.
Private-branch exchange equipment	8	Chicago Tel. Com.	D. & O.
Substations (subscribers')	10	Wisconsin R. R. Com.	D. & O.
Wire:			
Copper, line	40	Chicago Tel. Com.	O.
Copper, interior	30	" " "	O.
Galvanized iron, line	8–15	Wisconsin R. R. Com.	D. & O.

[67] Committee on Appeals and Review Memorandum 279, 42-20-1245.

Note that in some cases obsolescence is the controlling factor in the above table.

The following is from *Telephony*, Apr. 1, 1911 (pp. 401–3), estimated depreciation, schedule on an illustrative telephone plant:

	Annual Rate of Depreciation %
Poles and guys	6
Cable	2
Cable, messenger, hangers, labor, etc.	8
Cable terminals	7
Cross arms, hardware, insulators, pins, etc.	7
Line wire, copper	2
Drop wire and fastenings	8.5
Interior wire and fittings	8
Telephones and equipment	6
P. B. X. switchboards	7
Switchboards	7
Terminals, racks and machines	7
Batteries	18
Warehouse stock	3

For additional references and a very complete digest of public utility cases the reader should consult the "Accountants' Index" (pp. 622–634). The following may be noted:

In a Massachusetts telephone appraisal for rate purposes in 1909, 7.3% on the value of the property, exclusive of land, general supplies, and working capital (net current assets and cash on hand) was figured as the average yearly reconstruction cost.[68]

In an Oklahoma Telephone Rate Case in 1911, 7% on the reproduction value of physical property was regarded as a fair and sufficient allowance for depreciation.[69]

In a Louisville, Ky., Rate Case in 1911, 7% on the depreciated property was allowed, on the theory "that the average life of the combined elements which make up the plant is about fourteen years."

The California Commission allowed 5.5%, but the base was not certain, probably original cost.[70]

The Canada Board of Railway Commissioners allowed 6.77% on the book value of depreciable property in 1914.

In a Nebraska Telephone Case in 1914, $5.51 per subscriber's station was allowed.[71]

In an Oklahoma rate case, 10 years was accepted as the life for inside equipment.

TURBINES.—The following is from Grunsky, "Valuation, Depreciation and the Rate Base" (p. 286):

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[68] R. H. Whitten, Vol. I, p. 433.
[69] *Ibid.*, p. 434.
[70] R. H. Whitten, Vol. II, pp. 1189–90
[71] *Ibid.*, p. 1196.

	Life in Years	Authority
Turbines:		
Steam	15	St. Louis Public Service Commission. Case of Union Electric Light & Power Co.
"	20	Wisconsin Railroad Commission. Quoted by Henry Floy and in published reports.
"	20	Robt. Hammond. *Journal of the Institute of Electrical Engineers*, England, Apr. 25, 1907.
" (1c. lb. residual value)	30	Pacific Gas & Electric Co. Figures used in rate hearings before Master in Chancery, San Francisco, 1913-14.
Water	30	Wisconsin Railroad Commission. Quoted by Henry Floy and in published reports.
Water-type prior 1900	25–40	H. A. Foster. "Engineering Valuation of Public Utilities and Factories," Van Nostrand, 1912.
Water-type after 1900	30–50	H. A. Foster. "Engineering Valuation of Public Utilities and Factories," Van Nostrand, 1912.
Steam	20	Milwaukee Electric Railway & Lighting Co., in Milwaukee 3-Cent Fare Case, Aug., 1912.
"	15	St. Louis Public Service Commission. Case of Union Electric Light & Power Co.
"	20	Wisconsin Railroad Commission. Quoted by Henry Floy and in published reports.
"	20	Robt. Hammond. *Journal of the Institute of Electrical Engineers*, England, Apr. 25, 1907.
" (1c. lb. residual value)	30	Pacific Gas & Electric Co. Figures used in rate hearings before Master in Chancery, San Francisco, 1913–14.
"	20	Stone & Webster. Figures for Chicago Union Traction Co. Case.

WATER WORKS.—The following is from Barker's "Public Utility Rates":

Water Works	Life in Years	Authority	Cause
Buildings:			
Masonry	40–50	L. Metcalf	O.
Wood-frame	20–50		D.
Boilers:			
Fire-tube	12–16	"	D.
Water-tube	20–30	Wisconsin R. R. Com.	D.
Filter beds	30–50	" " "	O.
Hydrants	40–50	L. Metcalf	D.

Water Works	Life in Years	Authority	Cause
Mains:			
Large cast-iron (6-in. and over)	20–40	L. Metcalf	O.
Small cast-iron (4-in. and under)	50–75	"	O.
Steel	15–50	"	D.
Wood	30–50	Wisconsin R. R. Com.	D.
Meters	20–30	L. Metcalf	D.
Pumps and engines	20–30	"	D.
Duplex	20–25	Wisconsin R. R. Com.	D.
Triplex	20–30	" " "	D.
Crank and fly-wheel	30–40	" " "	O. & D.
Centrifugal	20–30	" " "	D.
Reservoirs	50–100	" " "	
		L. Metcalf	O.
Standpipes	30–50	"	D.
Service pipes, lead	50–100	Wisconsin R. R. Com.	D. & O.
Galvanized iron or steel	30–50	" " "	D.
Suctions and intakes	30–50	" " "	O. & D.
Valves	40–50	L. Metcalf	D.
Wells, driven or drilled	50–75	Wisconsin R. R. Com.	D.
Open and lines	75–100		

Note: D. denotes depreciation. O. denotes obsolescence.

The following is quoted from Uniform Accounts for Systems of Water Supply, Bureau of the Census:

Until further study and experience or a series of inspections and appraisals at fixed intervals furnish more accurate data, the average life of the various parts of the fixed properties of a water-supply enterprise may be assumed to be approximately as follows: For horses, carriages, automobiles, and laboratory apparatus and appliances, 10 years; water meters, service pipes, office furniture, and general operating equipment, 15 years; boilers, steam pipes, and filtration equipment, 20 years; engines, pumping machinery, and wood pipes, 25 years; masonry of filtration plant, cribs, iron water pipes, intakes and connections, fire hydrants, standpipes, and buildings, 50 years; reservoirs, tunnels, and aqueducts, 100 years; and for the water-supply system as a whole, 50 years. All these approximations are subject to modification by reason of any unusual conditions which may shorten or prolong the life estimated above.

In the *Des Moines, Iowa, Water Rate Case*, in 1910, an allowance of about 1% on the estimated present value of physical property subject to depreciation was granted.[72]

In the *San Francisco Water Rate Case*, in 1911, the district judge said:

I find the annual depreciation of this plant to be 1 per cent. per annum for cast iron pipe, 2 per cent. for wrought iron pipe, 2.5 per cent. for pump engines, flumes and wooden structures, and 5 per cent. for boilers.

In Wisconsin, in 1912, 0.8% was allowed on reproduction cost new.[73]

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[72] R. H. Whitten, Vol. I, p. 428.
[73] R. H. Whitten, Vol. II, p. 1203.

SECTION 12

GOOD-WILL

CONTENTS

SECTION 12

GOOD-WILL

DEFINITION.—"Good-will, in its commercial sense, is the present value of the right to receive expected future super-profits, the term 'super-profits' meaning the amount by which future revenue, increase, or advantage, to be received, is expected to exceed any and all economic expenditure incidental to its production."[1]

Leake's definition is sufficiently comprehensive to include all elements usually regarded as creating good-will. Chief among these are: **good name, reputation, business connections, custom, individuality,** and **locality.** No present value in good-will exists unless expected future revenue exceeds cost of producing it (including current expenses, depreciation, cost of management, and interest on capital). The **interest rate** to adopt depends on what rate is necessary to attract capital to the undertaking in question. Having regard to risk involved, rate of return on investments varies from, say, 4½% where element of risk is negligible to, say, 7%, where risk incident to ordinary industrial undertakings is present. Before a good-will value can be said to exist it must be shown that expected future yearly profits will exceed **normal hire** of invested capital in industry in question, because this normal hire can be obtained by capital at any time without payment of a premium. Payment for good-will is equivalent to payment of a premium.

Definition Illustrated.—Since good-will is present value of expected future super-profits, it is the present value of an ordinary annuity equal to the annual

	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	Int.	Total.
Present value of $1 annual instalments	$0.952	$0.907	$0.863	$0.823		$3.55
One yr. int. 5%	.047	.045	.043	.041	.176	
1st yr	$1.00	$ .952	$ .906	$ .864		
One yr. int. 5%		.048	.045	.043	.136	
2nd yr		$1.000	$ .951	$ .907		
One yr. int. 5%			.048	.045	.093	
3rd yr			$1.00	$.952		
One yr. int. 5%				.048	.048	.45
4th yr				$1.000		$4.00

[1] P. D. Leake, Good-Will: Its Nature and How to Value It, p. 4.

share of future super-profits. The present value is less than the sum of the future yearly amounts of such annuity. This difference is due to the fact that \$1 due a year hence is less than \$1 due now, because if money is worth 5%, \$1 due now will be worth \$1.05 a year hence. Taking interest at 5%, the present value of an annuity of \$1 for 4 years is \$3.55. This value is secured by adding together a number of units each representing the present value of a future year's annuity, as shown in preceding table.

The sum of the present values, \$3.55, plus the sum of interest, \$0.45, amounts to \$4, the sum of the four annuity instalments. The present worth of each instalment is less than the preceding one, because the time elapsing is one year longer in each case, thus allowing more compound interest to be earned.

The vendor of good-will receives its present worth plus the power to earn interest on the money thus received. This is shown in the following table, assuming that the good-will paid for is the present worth of an annuity of \$1 for four years.

	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	Total.
Present value paid to vendor	\$0.952	\$0.907	\$0.863	\$0.823	\$3.55
Interest at 5% which vendor can earn on amount of each unit between present date and date when each \$1 he sells is receivable	0.048	0.093	0.136	0.177	0.45
	\$1.00	\$1.00	\$1.00	\$1.00	\$4.00

NATURE OF GOOD-WILL.—Value of good-will is the present value of an annuity equal to an annual share of future super-profits. In fixing a selling price the vendor cannot expect to obtain the present worth of total future super-profits, because he must leave enough to induce another to purchase them. Probably one-half is as much as he should expect to secure. Moreover, he should receive, not the full amount of his share, but only its present value.

Good-will is temporary in character because of the temporary character of super-profits. Super-profits are temporary because of the effects of competition, which ultimately reduces earnings to a rate of profit equal to the normal rate of interest on invested capital, with due regard to the character of the risk. Super-profits, upon which good-will is based, should be regarded, not as a perpetuity, but as an annuity extending for a limited although unknown term of years.

WHAT GOOD-WILL COMPRISES.—Good-will includes a wider range of elements than was formerly assigned to it. Chief among these additional elements are:

1. Right to carry on manufacture, trade, and commerce; to enjoy benefits of current contracts including leases; and to use of trade-marks and trade-names.
2. Monopoly rights.
3. Copyrights.
4. Patents.

With the exception of the right to exercise monopoly, all of these values originate in personal skill and ability.

Good-will arises not only out of past work of business managers, but also out of past work of men engaged in pursuits in no way related to management. Past work of an inventor gives rise to good-will in the form of patent rights. Past work of an author gives rise to good-will in the form of copyrights.

Valuation of Good-Will

GENERAL REMARKS.—Valuation of good-will involves determination of the present value of an enterprise's excess earning power. Elements are sometimes included in good-will which are not related to it in any way; also there is sometimes a failure to recognize good-will where it exists. This is due to the tendency to regard good-will as the capitalization of excess earnings. This tendency has increased in the face of the **court definitions** to the effect that good-will is to be identified with location, reputation, commercial standing, and so on. It is not possible to reconcile the definitions with the method commonly accepted by the court, which measures the value of good-will by some multiple of the excess of average annual profits for a period of past years in excess of interest on invested capital plus cost of management. The factors usually mentioned in the definitions do, however, usually tend to create the excess earning power which in practice is made the basis of its valuation.

WHERE VALUATIONS REQUIRED.—Good-will valuations may be required under the following circumstances:

1. Upon the purchase of an enterprise by another concern or when a merger takes place.
2. Upon the incorporation of an enterprise.
3. Upon the admission of a partner to a partnership.
4. Upon the dissolution of a partnership, resulting from the death of a partner, the voluntary retirement of a partner, or the bankruptcy of a partner.
5. As a matter of routine policy.
6. Upon the purchase of a professional practice.

EXCESS EARNING VALUATION BASIS.—Since it has become the almost universal rule to value good-will on basis of earning in excess of interest on investment and a fair allowance for managerial services, the four following factors must be considered:

1. Value of net assets of business as a going concern.
2. Earning power of business.
3. The rate of interest to allow as a return on net investments.
4. The number of years' purchase of profits to take.

1, 2. To determine **net investment** it is necessary to arrive at a mutual agreement or else secure an expert appraisal of the fixed assets and a valuation by accountants of current and working assets. It may be necessary to make certain adjustments in the balance sheet items. Thus, if leases have not been carried at any figure, they should be given a figure and brought into the balance sheet. A revaluation of timber lands or of mineral rights may be desirable if these have increased from a low valuation to one based on surveys and estimates by engineers. Various changes may be necessary to allow for **amortization** or **depreciation.** Present, not past, conditions with respect to depletion, depreciation, and amortization must be considered, because it is

under these conditions that the future income of the business will be considered. If extraneous items are found among the assets they should be carfully considered. If a reserve fund exists which produces an income lower than normal rate of profit, this should be excluded in considering both principal and income. But if investments yield a return equivalent to ordinary commercal return upon capital, it is not necessary to eliminate them. Caution should be exercised in eliminating assets which represent a dead expense because ownership of them frequently contributes indirectly to the profits of a business.

In manufacturing it is sometimes advisable to construct facilities of sufficient capacity to meet growth in demand which will extend over a period of 5 years or more. Before doing this a reasonable estimate of increased volume of business must be secured. In valuing good-will, cost of maintenance, overhead, and insurance of temporarily unused facilities should not be charged against profits, nor should interest on excess capital invested be deducted in arriving at excess profits upon which valuation of good-will is based. Instead, valuation should be made upon basis of facilities employed.

3. **Proper rate of return on investment** is normal rate at which capital can be secured for the enterprise in question at date of good-will valuation. This varies with nature of business, kind of assets involved, and ratio of earnings to assets. There are certain limits within which capital can be raised by sale of bonds. Likewise there are certain limits within which preferred stock can be sold. These limits vary at different times, being affected by the conditions of the money and the investment market. If capital can be secured for industrial purposes by issuing 7% preferred stock to amount of the tangible assets, provided the dividend has been earned on an average of at least 4 times over a series of years, 7% is the rate to charge on tangible assets in valuing good-will. Again, if a 5% bond could be sold equal in amount to 40% of tangible assets, a 6% preferred stock for another 40% of tangible assets, and if common stock paying 10% were issued for the balance of tangible assets and good-will, then the average rate of 6⅗% would be a proper rate to use, provided certain ratios of earnings to interest charges and good-will could be shown.

For valuing good-will the **legal rate** should not be regarded as the **normal rate,** although in a number of New York decisions 6% was adopted.

The Treasury Department has advocated a rate of 10%. In stable business this is reduced to 8% or 9%.

4. The **number of years' purchase of profits to take** is the least settled point in good-will valuation. Its determination is partly a matter of judgment. The transferability of the good-will must be considered. Some kinds of good-will are **personal,** attaching to the individuals who create them. Others are readily transferrable to a vendee. Again, some good-will is **institutional,** as distinguished from that attaching to a single product. Good-will attaching to the name of Heinz is institutional because it helps the sale of any product coming under that name. Good-will attached to the **name of a particular product,** as *Danderine* or *Cascarets* is not institutional and has a more limited application. Institutional good-will should be valued at a greater number of years' purchase than good-will which rests upon a single brand of goods.

If good-will is nation-wide or world-wide it should be valued upon a greater number of years' purchase than if it is of only local extent. Good-will of a chain store should be valued on the basis of a higher multiple of average profits than should good-will of one large store with a more limited market.

Tending to create a higher purchase of good-will are: wide distribution in proportion to volume of product; wide variety of products sold under an institutional name; staple products in general demand by buying public; increasing volume of business. The last factor may be considered in applying the usual formula, or it may be considered as an independent factor. Possibility of adverse legislation may be a factor.

In fixing an allowance for managerial services, give consideration to character of business, i.e., whether staple or otherwise; to kind of training required of manager; and to usual standard of compensation for services established in similar lines of business.

It is sometimes necessary to make certain variations from the results shown in profit and loss accounts when determining net profits, with a view to ascertaining a certain number of years' purchase price.

At formation of the International Harvester Co. the good-will of the merging concerns was fixed by adding to the sum of profits of the two preceding years an additional 10% thereof. This method is fairly common among manufacturers. But in ascertaining net profits certain classes of income and expenditure were not included, among these being interest on accounts and bills receivable, on certain accounts payable, and also cost of collecting receivables. Depreciation was not deducted in determining value of good-will. Consequently, profits figure employed in placing a valuation on good-will was larger than that shown in Profit and Loss account.

The courts generally have not approved valuations based on more than 5 years' purchase, although in New York the Appellate Court in *Von Au* v. *Magenheimer*,[2] permitted a multiple of 6 years' purchase; while in valuing the good-will of Tiffany & Co. a multiple of 10 was approved.[3] This is the maximum multiple permitted by the court. The court recognized, however, that in most American cases a period ranging from 2 to 6 years is adopted, the number being dependent upon the nature of business, length of time it has been established at a given place, and extent to which it is known to the public. The tendency to go beyond the 5-year rule is justified by the increasing stability of forms of industrial organization and to improvement made in training executives. The accompanying chart reproduced from *System*, Jan., 1912, shows multiples employed in estimating good-will of various enterprises.

It is not desirable to employ as high a multiple against excess earning power when excess earnings are large, as when comparatively small; and it may be desirable to use different rates for different parts of such excess earnings. Suppose Company A has earnings of $10,000 in excess of a normal return of 7% on its net worth. If it is desirable to multiply such excess of $10,000 by 5 to determine value of good-will, or, as technically known, 5 years' purchase price of excess profits, then were average earnings $20,000 instead of $10,000 it would not be desirable to multiply the total $20,000 by 5, but to multiply first $10,000 by 5 and remaining $10,000 by, say, 3, thus securing a figure of $80,000, instead of $100,000, for good-will. Each additional block of excess earnings should be taken at a still lower rate. In general terms, the greater the surplus earnings as related to normal profits, the lower should be the rate by which they should be multiplied.

VALUATION ILLUSTRATED—SALE OF PARTNER'S INTEREST.— The following illustration of valuation of good-will in case of sale of one part-

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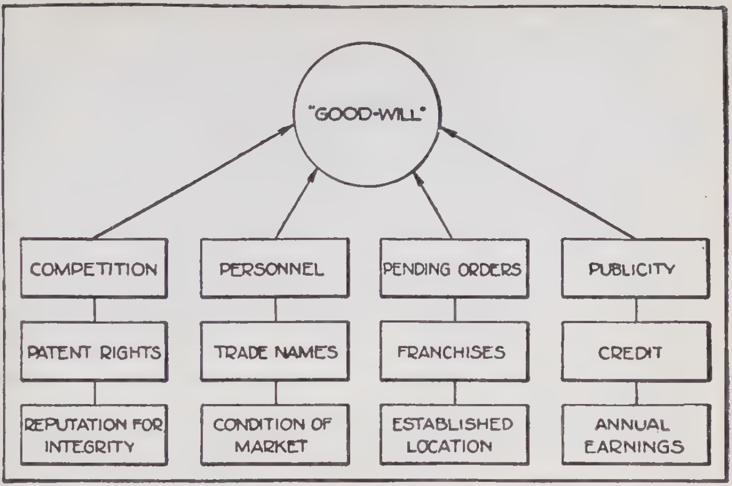
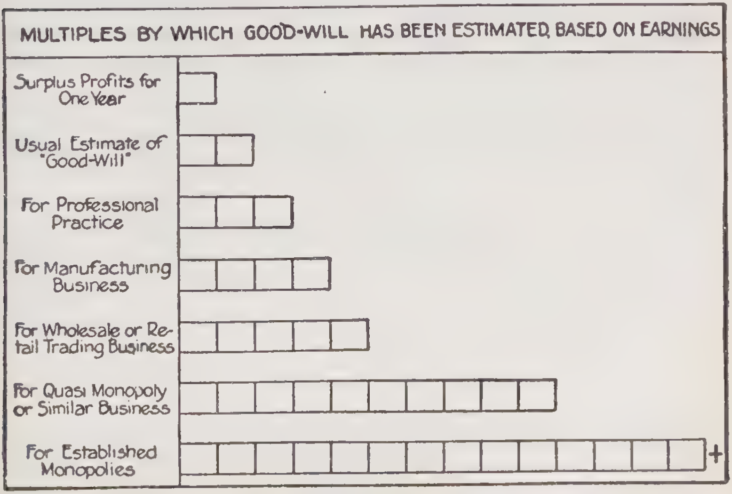
[2] 126 App. Div. 257.

[3] *Matter of Moore*, Misc. 238; 167 Supp. 213."



Some of the factors that enter into a computation of the "good-will" of a business. For obvious reasons these factors vary greatly in importance, dependent upon the peculiar conditions that affect the business that enters into the transaction.



The first rule in computing "good-will" is to determine the net earnings of a business, from which sum is deducted the interest on capital actually employed and the value of the owner's services. The result, multiplied ordinarily by two but sometimes by many times that amount, has been accepted as the value of the "good-will."

NOTE.—The above charts are reproduced by permission from *System* for January, 1912.

ner's interest in professional practice to another partner shows application of principles involved.

Assume that after allowing for interest on capital at the rate of 6%, but before allowing any sum for partners' services, average annual profits are $20,000. There are two equal partners, one of whom is to retire and will sell his share to the other partner. It is agreed to deduct $3,000 each per annum for personal services of partners. This leaves $20,000 – $6,000, or $14,000 as **super-profits.** One-half of this, or $7,000, belongs to the outgoing partner. He cannot expect, however, to receive $7,000 for it, otherwise there would be no inducement for the other partner to buy it. Probably he will be satisfied with ½ of it, or $3,500. It is now necessary to secure present worth of this super-profit. This depends upon the number of years the super-profit may reasonably be expected to continue as the result of past work and of the influence of the retiring partner. Suppose 10 years is agreed upon. The present value of an annuity of $1 for 10 years is $8.1109; therefore, present value of an annuity of $3,500 for 10 years is 3,500 × 8.1109 = $28,388.15, which, according to assumptions made, is price retiring partner should receive for his share of good-will. This is not quite three times former annual profits of the retiring partner.

VALUATION ILLUSTRATED—SALE OF FIRM'S BUSINESS.—The following illustrates method of using the year's purchase plan of valuing good-will in case of purchase of business and good-will of a firm by a corporation.

Company Y agrees to purchase business and good-will of X firm, the good-will to be determined on the basis of 4 years' purchase of average profits for past 10 years in excess of a normal rate of 7% on net worth of firm. Net worth of the firm is $200,000, and average annual profits for 10-year period are $27,000. From $27,000 deduct 7% of $200,000, or $14,000, leaving average excess of profits above normal at $13,000. This multiplied by 4 gives 4 years' purchase, or $52,000, as value of good-will.

FEDERAL VALUATION OF GOOD-WILL.—The problem of good-will valuation arises in connection with federal taxation of income. Treasury regulations not inconsistent with the laws have the force of laws. Its various informal rulings, however, are usually regarded as being merely statements of temporary positions. The Committee on Appeals and Review says [4]

> At the outset, the Committee desires it to be understood that in using the term "good will" it intends the term to be given not merely the narrow and technical meaning which has been attached to it in numerous court decisions, but to include as well the intangible value which always attaches to a more than usually profitable enterprise by reason of its proven earning capacity.

The Treasury throws the burden of proof of fair market value of good-will as at Mar. 1, 1913, on the taxpayer.

Three methods of checking soundness of taxpayers' methods of valuing good-will have been provided by the Committee on Appeals and Review, as follows:[5]

> The Committee has considered the question of providing some practical formula for determining value as of March 1st, 1913, or of any other date which might be considered as applying to intangible assets, but finds itself unable to lay down any specific rule which would be applicable in all cases and under all circumstances. Where there is no established market to serve as a guide the question of value, even of tangible assets, is one largely of judgment and opinion, and the same thing is even more true of intangible assets

[4] Cumulative bulletin No. 3, July–Dec. 1920, p. 47 (A. R. R. 252).

[5] A. R. M. 34, Cumulative Bulletin No. 2, p. 31.

such as good will, trade-marks, trade brands, etc. However, there are several methods of reaching a conclusion as to the value of intangibles which the Committee suggests may be utilized broadly in passing upon questions of valuation, not to be regarded as controlling, howeve , if better evidence is presented in any specific case.

Where deduction is claimed for obsolescence or loss of good will or trade-marks, the burden of proof is primarily upon the taxpayer to show the value of such good will or trade-marks on March 1, 1913. Of course, if good will or trade marks have been acquired for cash or other valuable considerations subsequent to March 1st, 1913, the measure of loss will be determined by the amount of cash or value of other considerations paid therefor, and no deduction will be allowed for the value of good will or trade-marks built up by the taxpayer since March 1, 1913. The following suggestions are made, therefore, merely as suggestions for checks upon the soundness and validity of the taxpayers' claim. No obsolescence or loss with respect to good will should be allowed except in case of actual disposition of the asset or abandonment of the business.

In the first place, it is recognized that in numerous instances it has been the practice of distillers and wholesale liquor dealers to put out under well known and popular brands only so much goods as could be marketed without affecting the established market price therefor and to sell other goods of the same identical manufacture, age, and character under other brands, or under no brand at all, at figures very much below those which the well known brands commanded. In such cases the difference between the price at which whisky was sold under a given brand name and also under another brand name, or under no brand, multiplied by the number of units sold during a given year gives an accurate determination of the amount of profit attributable to that brand during that year, and where this practice is continued for a long enough period to show that this amount was fairly constant and regular and might be expected to yield annually that average profit, by capitalizing this earning at the rate, say, of 20 per cent, the value of the brand is fairly well established.

Another method is to compare the volume of business done under the trade-mark or brand under consideration and profits made, or by the business whose good will is under consideration, with the similar volume of business and profit made in other cases where good will or trade-marks have been actually sold for cash, recognizing as the value of the first the same proportion of the selling price of the second, as the profits of the first attributable to brands or good will, is of the similar profits of the second.

The **third method,** and possibly the one which will most frequently have to be applied as a check in the absence of data necessary for the application of the preceding ones, is to allow out of average earnings over a period of years prior to March 1, 1913. preferably not less than five years, a return of 10 per cent upon the average tangible assets for the period. The surplus earnings will then be the average amount available for return upon the value of the intangible assets, and it is the opinion of the Committee that this return should be capitalized upon the basis of not more than five years' purchase —that is to say, five times the amount available as return from intangibles should be the value of the intangibles.

In view of the hazards of the business, the changes in popular tastes, and the difficulties in preventing imitation or counterfeiting of popular brands affecting the sales of the genuine goods, the Committee is of the opinion that the figure giving twenty per cent return on intangibles is not unreasonable, and it recommends that no higher figure than that be attached in any case to intangibles without a very clear and adequate showing that the value of the intangibles was in fact greater than would be reached by applying this formula.

The foregoing is intended to apply particularly to businesses put out of existence by the prohibition law, but will be equally applicable so far as the third formula is concerned, to other businesses of a more or less hazardous nature. In the case, however, of valuation of good will of a business which consists of the manufacture or sale of standard articles of every-day necessity not subject to violent fluctuations and where the hazard is not so great, the Committee is of the opinion that the figure for determination of the return on tangible assets might be reduced from 10 to 8 or 9 per cent, and that the percentage for capitalization of the return upon intangibles might be reduced from 20 to 15 per cent.

In any or all of the cases the effort should be to determine what net earnings a purchaser of a business on March 1, 1913, might reasonably have expected to receive from it, and therefore a representative period should be used for averaging actual earnings,

eliminating any year in which there were extraordinary factors affecting earnings either way. Also, in the case of the sale of good will of a going business the percentage rate of capitalization of earnings applicable to good will shown by the amount actually paid for the business should be used as a check against the determination of good will value as of March 1, 1913, and if the good will is sold upon the basis of capitalization of earnings less than the figures above indicated as the ones ordinarily to be adopted, the same percentage should be used in figuring value as of March 1, 1913.

To the above ruling there have been published other amendatory rulings among the most important of which are:

In determining the value of a corporation's assets, including good will, as of March 1st, 1913, contemporary sales of stock are held to be of greater weight than values based on appraisal.[6]

The Committee is in receipt of a request for advice as to whether under A. R. M. 34 the 10 per cent upon tangible assets is to be applied only to the net tangible assets or to all tangible assets on the books of the corporation, regardless of any outstanding obligations.

The Committee, in the memorandum in question undertook to lay down a rule for guidance in the absence of better evidence in determining the value as of March 1, 1913, of good will, and held that in determining such value, income over an average period in excess of an amount sufficient to return ten per cent upon tangible assets should be capitalized at twenty per cent. Manifestly, since the effort is to determine the value of the good will and therefore the true net worth of the taxpayer as of March 1, 1913, the ten per cent should be applied only to the tangible assets entering into net worth, including accounts and bills receivable in excess of accounts and bills payable.

In other words, the purpose and intent are to provide for a return to the taxpayer of ten per cent upon so much of his investment as is represented by tangible assets and to capitalize the excess of earnings over the amount necessary to provide such return, at twenty per cent.[7]

In applying the third method outlined in A. R. M. 34 (C. B. 2, p. 31) of determining value as of March 1st, 1913, of intangible assets, individuals or partnerships in determining net earnings should deduct a reasonable amount on account of the salaries of owners actively engaged in the business.[8]

In determining the value of good will as of March 1, 1913, in accordance with the third method outlined in A. R. M. 34 (C. B. 2, p. 31), and as a factor in the ascertainment of the value of a share of stock as of that date, a corporation which had not been in existence for a period of five years prior to that date was permitted to take the average earnings of the business for five years, thus including a part of the period of the partnership organization that preceded incorporation.[9]

The Committee in A. R. R. 252, Cumulative Bulletin 3 (p. 47), gives a definite example of a method to be employed when good-will is to be valued in a given case in which it was necessary to value good-will as one of the elements making up the value of closely held stock:

The Committee has had under consideration the appeal of A from the action of the Income Tax unit in determining the value of certain shares of stock in the M. Company owned by him March 1, 1913, and sold in 1916.

The difference between the market value of property owned on March 1, 1913 (with, in some cases, proper adjustments for depreciation, etc.), and its selling price determines the profit or loss, as the case may be. In any case, therefore, of the sale subsequent to March 1, 1913, of assets owned on that date, it is necessary to determine the market value of those assets on that date.

The Committee is of the opinion that the market value of shares of stock was what they would bring, and that the best evidence of what they would bring is what such shares did in fact bring them when offered for sale about that time in a free and open market. However, in the present instance, it is understood that there were no sales, and it is neces-

[6] Cumulative Bulletin No. 1, p. 73. This ruling was published before A. R. M. 34 but is still held sound.

[7] A. R. M. 68, Cumulative Bulletin No. 3, p. 43.

[8] Cumulative Bulletin No. 4, p. 43, O. D. 937.

[9] Cumulative Bulletin No. 5, p. 54, O. D. 1146.

sary to apply other tests, the market value in such case being deemed to be what a willing buyer might reasonably have been expected to pay or a willing seller to accept for the stock.

. . . . A prudent investor contemplating an investment, usually takes into consideration primarily two factors: First, the safety of his capital, and second, the return on it which he may reasonably expect. It is axiomatic that the greater the risk the less the price, and consequently he would be satisfied with a lower return upon an investment which is amply secured by tangible salable assets behind it than he would be from an investment made chiefly because of anticipated profits.

Applying the above principles to the case under consideration, we find that in 1916, all of the stock of the corporation in question was sold for the sum of 1,200x dollars. At the time of the sale, the value of the tangible assets of the corporation as shown by the books was 610x dollars. There was paid therefore, for the intangible asset referred to above as good will the sum of 590x dollars. Accepting the figures submitted by the taxpayer and the computations based thereon as correct, it appears that the average tangible assets for the period of three and one-third years prior to the sale was 586x dollars, and that the average annual net income for the same period was 112x dollars. In A. R. M. 34, approved by the Commissioner, the rule has been laid down that in a hazardous business the investor should have at least 10 per cent upon his tangible assets, and that in a stable line a less return would be satisfactory. It could hardly be contended that in 1913 to 1916, the business of manufacturing automobiles, where the company was putting out a car of recognized merit, with a wide demand, was particularly hazardous, and the Committee is therefore of the opinion that 8 per cent on the average tangible assets would be a fair return. This would absorb 46x dollars of the average yearly earnings of 112x dollars, leaving 66x dollars as the return upon the intangible assets.

Since it is shown above that the intangibles brought 590x dollars, it is apparant that they were sold on the basis of a prospective return judged by previous experience of a fraction over 11 per cent. Since the intangibles were actually sold in 1916 on this basis, the committee is of the opinion that it is only fair to apply the same percentage in ascertaining the value of the same intangibles three years previously. The average earnings of the corporation, covering approximately the five-year period immediately previous to March 1, 1913, were 30x dollars. During the same period the average tangible assets employed were 258x dollars. An 8 per cent return on the average tangible assets of 258x dollars required 20x dollars of this amount, leaving 10x dollars as the earnings attributable to good will at that time, which capitalized upon the same basis of 11.13 per cent, gives a value of 92x dollars as the value of the good will on March 1, 1913.

GENERAL METHOD OF TREASURY.—Allowing for extreme situations and the great flexibility of the income tax law, the general method of valuing good-will used by the Treasury is to allow a return of 10% (more or less according to the risk involved in the business) out of average earnings for the 5-year period preceding date as of which value of good-will is to be ascertained. The 10% is reckoned on average tangible assets for the 5-year period. Any surplus earnings over the 10% represents return on intangible assets. This is capitalized on basis of 5 years' (more or less according to the risk involved in the business) purchase.

SPECIAL POINTS IN GOOD-WILL VALUATION.—The following is adapted from a discussion by N. J. Lenhart. It covers many points in good-will valuation with special reference to federal taxation:

Good-will is an intangible and fluctuating asset representing value of a business over and above money, other tangibles and accumulated profits invested in it.

In actual sales and purchases the value has been computed in a variety of ways, as: (1) Aggregate of entire earnings of a specified period; (2) a certain number (of years' purchase) times average earnings in excess of a determined rate on average tangible investment for several years; and (3) capitalization of an average of several years' earnings at a specified rate, deducting therefrom the value of tangible assets. In a number of cases the amount paid for good-will represents only the difference between book value and sales price, which price is the result of a compromise between bid and asked prices with little or no regard to any of the above-mentioned methods of computation.

Good-will has value as a rule only when a business has earned and it is expected will continue to earn a rate on invested value of tangible assets in excess of a certain basic rate of return. The exception to the rule would be, for example, when a large amount of advertising has been done but sufficient time has not elapsed to show its value. Excess of earnings arises from a number of factors, as patents, reputation for integrity, trade names, publicity from past advertising, location, and a partial or complete monopoly.

In general, investors in bonds, preferred stocks or common stock place considerable importance on past earnings, reputation and good-will factors (although perhaps not to the same degree), because no investor is willing to invest in a business which he does not believe is reasonably assured of continued success.

The rate of return (earnings to investment) that will attract investments in common stock in any particular industry cannot be reduced to a definite figure. The factors affecting the yield expected are:

1. A seasoned stock with a long-continued earning and dividend record sells at a lower yield than an unseasoned stock.
2. A business with stable earnings sells at a lower yield than a business in the same industry with unstable earnings.
3. A steady growth in earnings always attracts investors at a lower yield than an unsteady growth or no growth.
4. The liberality of the dividend distribution, marketability, and sectional money rates have considerable effect on yield expected.

There is no general rate of return necessary to attract investors in any particular industry.

If any particular business is in question and a rate of return which will attract an investor is agreed upon, the question arises as to whether the investor desires the agreed return upon his whole investment or whether he desires the agreed rate on investment in tangible assets and a higher rate on investment in good-will.

One method of computation often used is to decide on rate of earnings necessary to attract investors, which may be 9%, for example, and then to take, say, five times excess of earnings over 9% on the investment during a specified period. Under this method resulting rate of earnings on new investment figure is always larger than the rate represented by 9%, provided, as is nearly always the case, the number of years used is less than 100 divided by rate used. It might be concluded that the invester requires a higher rate of return on amount invested in good-will than on balance of his investment.

This is not generally the case because:

1. In many instances businesses are purchased in which good-will is the bulk of the asset bought. This is particularly true when good-will consists largely of patents, or in case of retail stores where location is particularly favorable.

2. The purchaser expects to continue the business and further develop the good-will. The elements of good-will, such as location, patents, and trade-names, are no more likely to depreciate than are physical assets through misuse, obsolescence, and poor management.

The Treasury Department has consistently refused to allow depreciation on good-will purchased, assuming good-will to be of a more permanent nature than physical assets.

It is consequently reasonable to assume that a rate of return which will attract investors is a rate on their entire investment, including good-will.

In view of the foregoing discussion there are two methods of computing good-will as at Mar. 1, 1913, which seem desirable in two situations, namely: (1) When the business is sold and a price paid for the good-will, and (2) when there has been no sale and the value at which good-will is paid in for stock is to be determined, or when the good-will of liquor interests has been lost through enactments by Congress.

The procedure to be used in the first instance is best shown by an illustration of an actual case. The facts are:

Income in 1910	$ 150,000.00	Investment for 1910	$ 750,000.00
Income in 1911	160,000.00	Investment for 1911	800,000.00
Income in 1912	170,000.00	Investment for 1912	850,000.00
Total	$ 480,000.00		$2,400,000.00
Average	$ 160,000.00		$ 800,000.00

Per cent of return 20%

Income in 1917	$ 425,000.00	Investment for 1917	$2,000,000.00
Income in 1918	375,000.00	Investment for 1918	2,400,000.00
Income in 1919	322,000,00	Investment for 1919	2,800,000.00
Total	$1,122,000.00		$7,200,000.00
Average	$ 374,000.00		$2,400,000.00

Per cent of return 15.5%

The amount actually paid for good-will early in 1920 was $1,000,000, which, added to the average investment, $2,400,000, gives a new average of $3,400,000. Earnings for 1917, 1918, and 1919 were 11% on the $3,400,000. It is evident that the investor expects to get not more than 11% without further development of the business.

Earnings decreased during 1917, 1918, and 1919, but increased in pre-war years. Conditions were stable in 1910, 1911, 1912, whereas 1917, 1918, and 1919 were wartime years and a period of depression could be expected. Since, when conditions are stable and earnings show a steady increase, the risk is considered less and the expected yield is lower than when the reverse is true, it follows that in 1913 an investor or the same investor would undoubtedly have been satisfied with considerably less than 11% and certainly not more than 10%. On the basis of $160,000 average earnings in pre-war years and an expected return of 10%, the business was worth at least $1,600,000 at Mar. 1, 1913, and good-will was then worth $800,000. Due to nature of the business, patents, location, reputation, etc., earnings could be expected to continue for a minimum of 7 years and probably longer without additional development. Seven times average earnings over 10% in pre-war years shows a good-will of $560,000, which is obviously low (this is demonstrated in the actual case just cited), and this method admits of more argument than the one used in the illustration. If there are factors which make the pre-war period entirely different from the years preceding date of sale, this method based on actual sales price as illustrated above may be open to criticism, but as a rule it seems to be the fairest and least open to attack if there has been an actual sale of good-will.

If there has been no sale of good-will a more or less arbitrary method must be adopted. Any method used is open to discussion. It is of highest importance to get as many comparatively definite factors as possible.

In pre-war years the great majority of industries earned less than 10% upon invested capital. It follows that in most industries the rate which could be expected by investors willing to pay an amount equal to or greater than invested value of tangible assets was less than 10%. Variations in rates expected by an investor between industries as a whole depend upon risk involved. This risk varies directly with number of years the profits of the industry can be expected to continue according to character of the business.

The **preferred stock rate** expected in an industry varies much less between the various businesses in the industry than does the common stock rate. The preferred stock rate is, therefore, much easier to obtain and less open to question.

If expected rate of return on investment in a business were known, it would be easy to capitalize average earnings at that rate and call the difference between book value of net tangible assets and the figure so found good-will. But this rate is unknown and could not be satisfactorily agreed upon. However, since expected rate varies directly with risk, the rate would seem to be about the rate of average earnings to an investment figure made up of book value plus a number of years times average excess of earnings over the preferred stock rate. The number of years is determined according to the risk.

This method is used as follows:

Income in 1910	$150,000.00	Investment for 1910	$ 750,000.00
Income in 1911	160,000.00	Investment for 1911	800,000.00
Income in 1912	170,000.00	Investment for 1912	850,000.00
Total	$480,000.00		$2,400,000.00
Average	$160,000.00		$ 800,000.00

Preferred stock rate was about 6% during 1912:

6% on average investment	$ 48,000.00
Average earnings	160,000.00
Excess over 6%	$ 112,000.00
Seven times excess over 6%	$ 784,000.00

The good-will, as computed above, amounts to $784,000 as compared with $800,000 under the method previously discussed.

The **preferred stock rate** should be the rate in the industry in the locality of the particular business. This rate can be found with some degree of accuracy, at least with much greater accuracy than the rate necessary to attract investors to purchase common stock. The rate should be the average over a period of not more than a few years prior to date at which good-will is to be computed.

If a standard line of industry is decided upon and number of years' purchase to be used in that industry is agreed upon, relative degree of risk and number of years to be used in some other industry should result in no wide divergence of opinion. Number of years to be used in finding average return on investment need not be the same as number of years' purchase used, since cognizance must be taken of any special features present and facts which make certain years abnormal.

A set formula cannot be developed for computing good-will. Each case should be considered on its merits. If there has been a sale of good-will, the first-mentioned illustration or an adaptation of it gives the most accurate result.

If there has been no sale, some variation of the second illustration should be used.

Matter of Flurscheim[10] involves valuation of good-will in a transfer tax appraisal. The interest of Herman Flurscheim, equal partner with Franklin Simon in Franklin Simon & Co., after death of former in 1914, was appraised at $900,000, one-third of which was good-will. In remitting this report for revision, the Surrogate said: "Franklin Simon & Co. was established in the year 1903 with a combined capital of $110,000. Three elements must be considered in ascertaining good-will, viz., net profits, capital, and the number of years' purchase." Also:

The transfer tax appraiser has applied a multiple of three years to the sum ascertained by deducting from the net profits as found by him 6% interest on the capital and $100,000 —representing the value of the services of the decedent and the surviving partner, to which latter item no objection is made and the amount appears to the court reasonable and proper. The sole reason assigned by the accountant and adopted by the transfer tax appraiser for not applying a larger multiple is because the firm was in existence at the death of the decedent only 12½ years. I do not think that this is a controlling factor. The record shows that the sales have increased steadily since the establishment of the copartnership. The sales for the 3 complete fiscal years preceding decedent's death were respectively $3,986,859, $5,003,364, and $5,919,925. In the year prior to the death of decedent $219,852.82 was the sum spent for advertising. The firm is extremely well and favorably known. It has succeeded in establishing a reputation in the community which might not be gained by other concerns in business many years longer. Under all the circumstances I think a 5 years' purchase should be applied in fixing the good-will.

The deceased's interest in the copartnership was ascertained by computing average net annual profits for the 3 complete fiscal years preceding his death. From this was deducted 6% on average annual net tangible capital and surplus employed for the same period, and a total of $100,000 as the annual value of the services of the two partners. The difference multiplied by 5, or about $1,200,000, was held to be the amount of good-will.

The method of valuing good-will approved by the New York courts is as follows:

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[10] 107 Misc. 470.

1. From average net profits for several years preceding deduct 6% on average net capital employed for same period.
2. Allow a reasonable deduction for services of the owners if they have not received adequate compensation for services.
3. Additional allowance should be made for deceased partner's services if they have been of special value to the enterprise.
4. Multiply the difference by a number of years' purchase, this usually varying from 2 to 6.
5. The court determines the number of years' purchase as a question of fact. In doing so it considers character of business, time it has existed, amount spent on advertising, and its reputation.

In Massachusetts the courts have not adopted a formula but give consideration to any factors which seem to bear weight.

OBSOLESCENCE OF GOOD-WILL.—Obsolescence of good-will occurs when sale of a commodity is curtailed or destroyed by adverse legislation. **Good-will of brewers** was made obsolete by the prohibition law. In such cases it is necessary to ascertain amount of good-will value destroyed. It is customary for liquor dealers to put out under popular brands only as much goods as can be readily marketed without affecting established price. Other goods of same manufacture are sold under other brands or under no brand at figures much below those asked for the well-known brands. The difference between the price at which a commodity is sold under a given brand and that at which it is sold under no brand name, multiplied by number of units sold during a given year, is amount of profit attributable to that brand during that year. If this practice is continued long enough to show that results are fairly constant and regular and may be expected to yield about the same profit each year, value of the brand may be determined by capitalizing this earning at, say, 20%.

The **principles of valuation** applicable in case of obsolescence of good-will are, in general, same as those applicable under other circumstances. **Hazards of the business** under consideration must be considered in determining at what rate to capitalize excess earnings. The Treasury in valuing good-will of brewers, allows out of average earnings over a period of years prior to Mar. 1, 1913, preferably not less than 5 years, a return of 10% upon the average tangible assets for the period. Surplus earnings above this represent return on intangibles. This the Treasury capitalizes upon basis of not more than 5 years' purchase, i.e., five times the amount available as return from intangibles is value of intangibles.[11]

In a specific case the Bureau of Internal Revenue determined the value of intangible assets by first making an appraisal of the tangible assets at about the time they were sold by owner, Nov., 1919. Five years' earnings prior to time of sale, i.e., for the years 1915-1919, inclusive, were averaged and a rate of 8% on value of tangible assets as appraised was taken as a fair return thereon. Balance of income above this was divided by difference between selling price of business and appraised value of tangible assets. This gave a percentage of 11.33, which was the return on good-will. This ratio of 11.33 was then applied to average earnings for 5 years prior to 1913 to secure good-will figure as of Mar. 1, 1913. In arriving at net income for purposes of determining value of good-will, income taxes assessed during 1915-1919 were not deducted from gross income, because the valuation is supposedly the same as it would have been had it been made on Mar. 1, 1913. At that

[11] Cumulative Bulletin No. 2, p. 31.

time the taxpayer could not have foreseen what taxes would be imposed. The period, 1915–1919, was hardly a typical one because rates of income were higher than usual during much of that time.

ROUTINE TREATMENT—WRITING DOWN.—Some authorities claim that good-will is subject to **depreciation**; others claim that it is not. Ordinarily it is better to regard it as not being subject to depreciation.

There remains the question of desirability of writing it down. The chairman of Messrs. Schweppes, an English concern, stated, in 1922, that the good-will of his company had, since 1918, been written down from £1,039,309 to £820,000, but considered even that figure subject to criticism and added that the directors would continue the drastic writing down of this asset out of profits.

Value of good-will depends on profits earned and upon probability of their continuance. If a concern writes down good-will, the amount set aside is an appropriation of profit or surplus, not a charge against income. When profits are sufficient to provide directors with surplus sufficient to write down good-will, that in itself is evidence that good-will has not decreased in amount; it may, in reality, have increased. On the other hand, if profits have decreased, there is not likely to be any surplus which can be used to write down good-will.

In *Wilmer* v. *McNamara* (1895), an English case, it was held that a company is under no legal obligation to write down its good-will whether or not salable value has been reduced. Unless a company has special reasons for doing otherwise, it is usually preferable to employ surplus for writing down good-will.

It makes no essential difference whether a concern carries its surplus profits to a surplus reserve account, allowing good-will to stand at cost, or uses it to write down good-will. If good-will is permitted to stand at cost on the balance sheet while surplus profits are accumulated in a surplus account, there remains the temptation of using this surplus to declare dividends, which would not be the case were surplus used to write down good-will.

There exists no **legal obligation** to write down good-will out of profits subsequently earned; consequently such profits may be used to pay dividends. But this is not sound procedure from an accounting point of view, and if it appears that value of purchased good-will is diminishing, steps should be taken to write off a reasonable amount of it.

Fluctuating character of super-profits makes difficult putting into operation of any definite scheme for writing down good-will. This does not mean that reasonable means should not be adopted for such writing down.

ROUTINE TREATMENT—SINKING FUND METHOD.—This consists of setting aside equal annual instalments to accumulate, at compound interest, in a given time to the amount which has been expended in buying good-will. Given a definite period of years over which to write off good-will, effect is the same by the sinking fund method as by writing it off directly. The apparently smaller contribution required to the sinking fund is accounted for by the fact that the sinking fund grows not merely by the annual instalments but also by the accretions of interest. When good-will is written off by direct annual charges to Surplus, the cost is the same one year as another. When the sinking fund method is followed, the cost increases each year. Thus if the sinking fund accumulates at 4% to $100,000 over a period of 20 years, the first instalment is $3,358 plus no interest, whereas the last instalment is $3,358 plus $3,717 interest, a total of $7,075. It is an error to omit calculation of the growing annual interest cost from the records. The chief objection

to the sinking fund method is that there is no security that it will ultimately be used for the purpose intended. It may thus create a false sense of financial security.

Special Problems

PURCHASE AND MERGER.—When one concern purchases an interest in another, good-will is brought in to represent excess earning power of purchased concern. An alternative procedure is suggested in the *Accountant* for June 3, 1922 (p. 784), as follows:

As good-will represents the capitalized value of the company's earning powers it might, therefore, be preferable for new companies to issue their ordinary shares at a premium representing the purchase price of the good-will, thus avoiding the necessity for showing any good-will value in the Balance Sheet; then, if profits did not reach the standard expected, the good-will would be automatically eliminated by the corresponding fall in the market price of the shares.

When companies buy out small traders who have given personal attention to the management of affairs, they frequently pay for good-will more than conditions warrant. The small owner earned a profit which recompensed him not only for his investment but also for his time and personal exertions. Stockholders do not make the same personal exertion and so cannot expect to secure the same profits. This circumstance frequently leads to over-capitalization of companies through their anticipation of a continuance of the profits of the small absorbed enterprises, but whose earning capacity under changed conditions does not fulfil expectations. If old owner continues with the concern as manager the situation is more favorable, but then earnings on capital ordinarily are decreased because of increased investment necessary to make it possible to capitalize good-will.

Ordinarily the **amount to be paid for good-will** is determined in the agreement of sale entered into between purchasing company and vendor. If the agreement does not specifically mention good-will, it may be inferred that it does not exist unless purchase price is in excess of assets taken over. Also, such assets may be representative of other intangible assets—as, patents, trade-marks, copyrights, etc. Sometimes good-will is regarded as one asset in combination with these other items which may be essential to its existence.

To have a **sales value** good-will must represent a substantial excess of earning power over a fair return on the investment plus a reasonable allowance for managerial salaries. Merely because a business is well established does not mean that it has good-will for which a buyer can afford to pay a large sum. If, under any conditions earnings are not largely in excess of interest on capital plus managerial salaries, it is improbable that a new management can increase them greatly. **Mere sentiment** attached to an old but losing business is not good-will. Frequently lack of earning power is ascribed to bad management, but this plea is overworked. Profits should be increasing. In case of a business which is standing still the danger of retrogression is great.

RELATION OF COMMON STOCK TO GOOD-WILL.—When good-will represents an important item in capitalization of mergers and consolidations, it is usual to make it the basis for an issue of common stock. Preferred stock is issued to amount of physical assets and from total net earnings is deducted the sum required to pay dividends on this preferred stock. Remainder of net earnings is then capitalized to find amount of good-will and therefore amount of common stock to be issued.

To illustrate, assume case of a concern having net earnings of $4,000,000

a year. Its physical property is valued at $21,000,000 and preferred stock is issued to that amount. A 6% dividend is to be paid. This amounts to $1,260,000, which deducted from net earnings of $4,000,000 leaves $2,740,000 of yearly profits due to good-will. Now, if common stock dividend rate is to be 8%, good-will valuation will be 2,740,000 ÷ .08 = $34,250,000, which, for sake of round numbers, might be placed at $35,000,000. At organization of the U. S. Steel Corp. preferred stock and bonds were issued to cover tangible assets and common stock was issued to represent good-will, its amount being such that had profits been maintained it would have received a dividend of 7½%. So little confidence existed in the ability of the Steel Corp. to succeed that at one time a share of its common, par $100, could be bought for $8. Yet it later sold for more than 136. On July 11, 1922, it was quoted near par.

Sears, Roebuck & Co. was capitalized on a similar basis. At time of organization in 1906 its material assets were valued roundly at $10,000,000. The preceding year profits were $2,868,061.31. Preferred stock was issued to amount of $10,000,000 and was assigned a 7% cumulative dividend, necessitating $700,000 yearly. This left $2,168,061.31 upon which to base good-will valuation. Common stock was placed at $30,000,000 and was therefore capitalized at between 7% and 8%.

Recently the requirements of the **excess profits tax law** to the effect that no valuation of intangible assets in excess of 25% of total par value of a corporation's stock shall be recognized, has interfered with this plan of capitalization. When, in 1919, the Endicott-Johnson Co. was organized, the good-will was valued, not on basis of producing power, but arbitrarily in order to comply with provisions of the tax law. The capital stock amounted to $29,000,000; $7,000,000 of this was based on good-will. It was stated that had good-will been based on earnings or a lump sum valuation, it would have been placed at a much higher figure.

PARTNERSHIP ACCOUNTING.—Good-will is introduced into partnership accounting for one of the following reasons:

1. Purchase of the good-will of the business.
2. Purchase of some additional business by the partnership.
3. Sale of a part of the business of the partnership.
4. Admission of a new partner.
5. Retirement or death of a partner.

When, because of one of these circumstances, good-will is brought upon the books **for purposes of adjustment,** it is customary either to eliminate it from the accounts or to credit or debit it to the partners' Capital accounts according to agreement.

When good-will is to be eliminated from the accounts, it should, in absence of contrary agreement, be carried to the Capital accounts in profit and loss-sharing ratio. Thus, if partners M and N share profits in proportions of 3 parts to M and 1 part to N and X pays $5,000 for a ¼th share in future profits and brings an additional $10,000 into the business as his invested capital, the latter will be brought into the books by means of a charge to cash and a credit to X's Capital account. The $5,000 paid for a ¼th share in future profits of the business may be handled in different ways. M and N are entitled to it in proportions of ¾ to M and ¼ to N, because in the future their profits will be less by those amounts, respectively. M is entitled to ¾ of $5,000, or $3,750; and N is entitled to ¼ of $5,000, or $1,250. There are various ways of affecting the desired result. M and N may receive their

shares directly from X and no entry need be made on the books. If, however, it is desired to bring the amount into the business because it is thought that this additional capital will be required because of developments, M and N may credit their Capital accounts with the proper proportions.

Another plan is for M and N to place a valuation upon good-will of, say, \$20,000, enter it among the assets at that amount, and increase their capital accounts, respectively, \$7,500 and \$2,500. X is then allowed to bring in his \$15,000 as his investment, his Capital account being credited with that amount, on condition that the \$20,000 good-will be regarded as an asset of the business. If in the future this good-will is eliminated, X will be charged with ¼ of the total, or \$5,000, leaving his Capital account at \$10,000, the same as where, by the other method, good-will is not brought into the books.

DISSOLUTION OF PARTNERSHIP.—Provision for handling good-will in case of dissolution of a partnership resulting from bankruptcy, death or retirement of a partner, should appear in the articles of agreement. It should cover two points: (1) method of valuation, and (2) method of settlement.

Sometimes a **specific provision** occurs, that no allowance shall be made for good-will. Sometimes a **fixed sum** is stated as its agreed value for purposes of adjustment of partners' interest. Usually it is better to take good-will at an **agreed number of years' purchase of yearly profits,** such yearly profits to be determined by averaging the profits of 2 or more years immediately preceding the one in which dissolution occurs. Usually it is agreed that payment of the share of the deceased or retiring partner shall be in instalments, which are spread over a period of 1, 2, or 3 years, interest being allowed an agreed rate on unpaid portion. If a partner retires under an agreement that good-will shall remain the property of the partners who continue the business, he is subject to same restrictions as is the vendor of a business. See "Status of Vendor and Vendee," p. 589.

ADMISSION OF PARTNERS.—If a partnership has an **established business** it is usually necessary to consider good-will when a new partner is admitted, to give due credit for efforts of old partners in building up the business. Unless there is agreement to the contrary, when a new partner is admitted his contribution entitles him to share equally with the other partners in profits no matter what the amount of his investment may be.

Suppose A and B are partners and the following balance sheet shows their financial status:

Cash	\$ 5,000	A, Capital	\$17,500
Other Assets	30,000	B, Capital	17,500
	\$35,000		\$35,000

It is agreed to admit C to the partnership, he to receive ⅓rd interest on condition that he invest \$20,000. It is necessary either to:

1. Bring good-will into books according to some agreed plan, or,
2. Make an adjustment among the Capital accounts without bringing in good-will.

If it is decided to bring in good-will, this is done through following journal entry:

Good-Will	\$5,000	
A, Capital		\$2,500
B, Capital		2,500

This increases Capital accounts of A and B to $20,000, respectively, and when C contributes his share, Capital accounts of the three partners will stand at same amount. But if decided to make an adjustment among partners' Capital accounts, this may be done as follows:

C, Capital	$2,500	
A, Capital		$1,250
B, Capital		1,250

The following illustrates some problems arising in partnership adjustments for good-will.

A and B form a partnership, but before they have gone far enough with developments to demonstrate their success, C becomes interested. He offers to put in capital equal to each of theirs for a ⅓rd interest. A and B, however, demand a 10% bonus to be divided between the two of them. In agreeing to pay this, C is not buying good-will, but is speculating.

If, now, the firm operates for a long enough time to establish the fact that it has a stable earning power well above normal and D desires to become a partner, the old partners will require him to pay not only for book value of a ¼th interest, but also an amount equal to ¼th of the capitalized excess earnings, by bringing good-will upon books and crediting their Capital accounts with their respective shares therein. The total contribution from D will bring his Capital account up to an equality with accounts of A, B, and C. In this case D is not speculating but is paying for good-will. Should A, B, and C require D to pay more than the amount justified by excess earnings, as shown by past experience, because of anticipated increase of profits in future, this payment would not be for good-will, but for speculation. If it is desired to bring the full amount on books only, the true amount of good-will should be charged to Good-Will account, while amount paid in excess thereof should be charged to a "Bonus to Old Partners" account, and should be written off as soon as practicable.

PARTNERSHIP INCORPORATED.—When a partnership is to be incorporated and the old partners are to become sole stockholders in new company, the necessity of bringing in good-will is not apparent, because each would secure his proportionate interest and his due proportion of profits. In such a close corporation capitalization is not a matter of importance; in fact it is frequently fixed at an amount which is purely arbitrary. When, however, there is a likelihood of changing membership, the question of capitalization becomes of importance; it may be laid down as a general rule that if stock is sold at any time, an undercapitalization will be found disadvantageous. For this reason, when a firm is incorporated, good-will should be valued as carefully as any other asset.

GOOD-WILL BASED ON TRADE-NAMES.—An essential difference exists between good-will of a concern which sells a **staple product** which is bought and sold under its staple name but without reference to the producer, and good-will of a concern which sells an article under a **trade-name** and which is always traded in with a knowledge of the producer or of the brand. The former kind of article is usually advertised under its trade-name, and if the market is an expanding one, it gives rise to a form of good-will of which the owner cannot be easily deprived. Good-will which is built up on trade-names may, however, be suddenly lost if the article becomes unpopular for some reason. The **tobacco business** affords an illustration of good-will built up on trade brands. Most forms of manufactured tobaccos are sold under **special brand names.** Extraordinary profits have resulted from the

popularity which some of these brands have acquired. Such popularity must be based upon actual valuable qualities possessed by the goods. Brands of manufactured tobaccos are in this respect like many so-called proprietary articles—patent medicines, perfumes, liquors, toilet preparations, and chewing gums.

RELATION TO INVENTORY TURNOVER.—Inventory turnover is measure of rapidity with which working capital is reinvested in stock-in-trade. Since any increase in **rate of turnover** results in a higher rate of profit on invested capital, and since good-will is determined by excess of net profit over a fair return on investment, it follows that there exists a close relationship between good-will and turnover. Creation of good-will through **advertising** and by giving **prompt and efficient service** is one of the best ways of increasing turnover.

RELATION TO PATENTS.—From an economic point of view, patents, especially when found in groups, are closely analogous to good-will. **Value of patents** varies directly with their earning power. Although patents possess a definite legal life, this is more or less of a fiction because this life is generally extended by making improvements on the original. As a consequence, in a going business the value of patents becomes a form of good-will closely connected with the trade-name. For this reason the Bureau of Internal Revenue, while permitting taxpayers to depreciate patents on basis of a normal life of 17 years, does not require it, but leaves it optional with the taxpayer.

ACCOUNTING PROCEDURE.—Good-will should appear on the **balance sheet** as a separate item and at cost, unless found advisable to write it down in accordance with well-defined policy. Since good-will takes recorded form not as it is created, but only as a result of a contract necessitating the determination of its value, it is probable that bulk of value existing in form of good-will is not recorded. Only in case of sale should it show a profit; it must not be arbitrarily written up in order to show a profit. Tendency of actual value of good-will to fluctuate constantly is sufficient reason why no changes should be made in the account except in case of sale or in case it is thought desirable to write it off against surplus. Occasionally good-will is written up, surplus increased to correspond, and a stock dividend paid. Good-will is not subject to the ordinary influences which cause tangible assets to depreciate, i.e., it is not affected by wear and tear, obsolescence and inadequacy; hence it should not be cared for as these depreciating assets are. Writing off good-will may give rise to a **secret reserve.**

Ordinarily the figure at which good-will is carried on the balance sheet is of little significance to an intending purchaser, because he makes his own estimate of it on the basis of past profits.

Good-will should not be written up and credited to profits, because there results a swelling of profits which is not realized and which is subject to shrinkage. The increase in value of good-will is the result of profits already taken into account, so that addition of the increased value of good-will to profits results in doubling actual gains and thus may lead to dividend payments not justified by circumstances.

There are exceptional cases in which it is permissible to write down good-will for **depreciation** or **obsolescence.** The Bureau of Internal Revenue permits a deduction for income tax purposes in case of discontinuance of a going business because of exhaustion of source of supply, providing cost of good-will or its value as of Mar. 1, 1913, if acquired before that date, can be

shown definitely and the period of obsolescence determined with reasonable accuracy. To sustain a claim for such a deduction for obsolescence it must be shown that good-will will be valueless at the close of a period which can be ascertained with reasonable accuracy. The good-will must also be assignable as distinguished from good-will which attaches to individuals or to premises. No allowance will be made if the good-will is of value in another business.

BALANCE SHEETS FOR CREDIT PURPOSES.—If a balance sheet is to be used for credit purposes, it does not ordinarily matter whether good-will is allowed to stand at cost or is written off against surplus. Writing off good-will has no effect on the financial standing of a company, because bankers and other creditors judge financial strength by comparing tangible assets with liabilities. They are interested chiefly in the relation of quick assets to quick liabilities. They place no reliance on good-will, because it is intangible and vanishes when the concern becomes unprosperous, which is exactly when the creditor requires protection.

SPECULATION vs. GOOD-WILL.—When a business is purchased at more than net book value, the excess paid represents either purchase of good-will, which is based on established earning capacity, or a speculation in the form of a purchase of what is believed to be discounted value of future profits. See "Good-Will in Admission of Partners."

INSURANCE AND GOOD-WILL.—When the good-will of an enterprise is dependent largely upon efforts and personality of one man, a convenient method of securing protection against sudden loss of that good-will from death is to insure the life of the individual concerned. An insurable interest exists here. The president and guiding spirit of a corporation dies. The company has insured his life for $50,000, and so does not feel ill effects from his death. A dry goods concern is started by three young men. The life of each is insured for $12,000. Shortly after beginning operations one partner dies. The insurance makes possible a quick settlement and the business is continued without interruption.

APPRECIATION OF GOOD-WILL.—There may be justification for reappraising tangible assets; there is none for the writing up of good-will, except sale or some other contract involving the determination of its value. When a concern arbitrarily writes up good-will, credits Surplus, and pays a dividend to stockholders, it defrauds them. If a stockholder receives such a dividend with notice to that effect, he should regard it not as income but as a distribution of capital. Under such circumstances it is reasonable to assume that true surplus has been exhausted. See "Accounting Procedure," p. 585.

Going Concern Value

DEFINITION.—The expression **going concern value** is employed in place of **good-will** in connection with valuation of public utilities. Justice Moody, of the United States Supreme Court, in *Knoxville Water Co. Case*, defines going concern value as follows: "This sum we understand to be an expression of the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is in active and successful operation and earning a return."

Wm. H. Bryan's definition: "It is the value such a plant has over and above its physical value, due to the fact that it is not a bare and idle system, but it is in actual operation, doing business with large numbers of connected customers. It is something like the good-will of a business but is even more tangible."

Various methods have been employed to **estimate going concern value.** Frequently English syndicates, when buying property in the United States, have valued this item as the equivalent of the net income of a given number of years, or, in other words, as a given number of years' purchase price. But when the utility possesses a **monopoly,** the majority of court decisions are against allowing anything for going concern value. In other cases it is customary to allow for a reasonable expenditure of money in getting the business of an undertaking established. This item was first officially recognized by Justice Brewer in 1894, in the *Kansas City Waterworks Case.*[12] He said: "The city steps into possession of a property which not only has the ability to earn, but is, in fact, earning. It should pay, therefore, not merely the value of a system which might be made to earn, but that of a system which does earn."

One method of determining going concern value is to base it on net earnings. But it must be remembered that courts are not inclined to favor property valuations arrived at by this method. It was followed by the Wisconsin Commission, in *Hill* v. *Antigo Water Co.*,[13] and in *State Journal Printing Co. et al.* v. *Madison Gas & Electric Co.*[14] The method followed is illustrated by results secured in case of the electric light plant in Madison. Cost of electric plant at time of acquisition was first determined as closely as possible. To this was added cost of all new extensions, increases in value of land, depreciation, and interest and profit calculated on original cost at rate of 8%. From the total thus secured net earnings of the year were deducted. The balance indicated value of plant at end of year. This amount was then carried forward and became "earning value" as of Jan. 1 of following year. To this amount same items as shown above were again added. In this way the value was determined for each year and used as starting point in year following. The last value determined, in this case for year ended Dec. 31, 1908, was taken as earning value of plant. Depreciation, it should be noted, is added to value instead of being subtracted from income. By either method the result is the same, but the Commission calculated on setting up a depreciation account to which a certain sum should be added out of surplus each year. Moreover, computing interest and profit at rate of 8% and adding this amount and depreciation to general cost, resulted in carrying forward to next year any balance of depreciation, interest, and profit which was not covered by the year's net earnings, and which was to be paid during later prosperous years in the life of the plant. The computations are shown in the following table.

RELATION OF GOING CONCERN VALUE TO PHYSICAL PLANT.— Physical plant is the basis of all value. For this reason it is usually maintained that going concern value does not depend wholly upon earning capacity as a thing apart from physical property. Earning capacity depends on rates, and rates depend on fair value of physical property. Without substantial physical property, earning capacity and going concern value cannot exist.

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[12] 62 U. S. Fed. Rep. 853.
[13] 3 W. R. C. 623.
[14] 4 W. R. C. 582.

Madison Gas & Electric Co.—Earning Value—Electric Plant

Year	Earning Value Jan. 1	Additions to Depreciable Property	Increase Land Values	Depreciation Straight-Line Basis	Interest 8% on Value	Total	Net Earnings from Operation	Value Dec. 31
1896*	$134,400	$ 6,745	$ 921	$ 4,030	$ 7,168	$153,264	$14,718	$138,546
1897	138,546	13,141	1,620	6,390	11,084	170,781	25,427	145,354
1898	145,354	8,613	1,620	7,066	11,628	174,281	30,123	144,158
1899	144,158	17,693	1,620	7,509	11,533	182,513	34,120	148,393
1900	148,393	34,550	1,620	8,419	11,871	204,853	32,924	171,929
1901	171,929	45,960	1,620	10,196	13,754	243,459	34,810	208,649
1902	208,649	55,329	1,620	12,559	16,692	294,849	40,388	254,461
1903	254,461	34,936	1,620	15,403	20,357	326,777	31,818	294,959
1904	294,959	23,345	1,620	17,199	23,597	360,720	38,751	321,969
1905	321,969	42,889	1,620	18,400	25,758	410,636	40,938	369,698
1906	369,698	13,138	1,620	20,605	29,576	434,637	54,341	380,296
1907	380,296	81,707	1,620	21,281	30,424	515,328	61,560	453,768
1908	453,768	13,887	....	25,482	36,301	529,438	78,987	450,451

* Nine months.

Miscellaneous

STATUS OF VENDOR AND VENDEE.—The **purchaser of good-will** of a business acquires the right to represent himself as the successor to the business in question. Ordinarily, too, he can use the trade-name of the business, but not in such a way as to render the **vendor** liable for debts incurred in such trade-name. On the other hand, the vendor cannot continue to trade in his own name if he carried on the business in that name and if it can be shown that it would deceive the public into believing that he continues to be the owner of the business or if it would be impossible to trade without thus deceiving the public. Neither can the vendor set up a business under any name which might cause the public to infer that he is still conducting his old business. Nor can he circularize his old customers and thus injure the value of the good-will which he has sold. The vendor may, however, set up a new business. He may trade in the same line of business, and wherever he chooses, if there is no special understanding to the contrary. He may do whatever a stranger might in the ordinary course of business do, even to the extent of interfering with the custom of the vendee; but he cannot avail himself of his special knowledge of old customers to regain them, without consideration, because he parted with them for value. "He must not make his approaches from the vantage ground of his former position, moving under cover of a connection which is no longer his."

In so far as possible the vendee should protect himself by entering into an agreement with the vendor to the effect that, except under prescribed conditions, vendor shall not compete against the business which he sells. By doing this it is possible to lay down the conditions required by the particular business in question and to meet the requirements of the peculiar circumstances which affect it. The more restrictive the agreement of sale, the more valuable it is to the vendee and the less likelihood there is that the vendor can derive any future benefit from it. Such an agreement must not, however, be in unreasonable restraint of trade.

To make the restraint reasonable it must be for a valuable consideration and it must be only partial.

SEIZURE UNDER COMPULSORY POWERS.—When one must vacate his premises because the land has been seized under right of eminent domain, he should be compensated for loss of good-will resulting from evacuation of the premises, as well as for loss resulting from material damages. In such cases the good-will is not transferred but remains the property of the trader. The good-will may not be greatly affected, as where orders are received from a wide area, and especially if convenient quarters can be secured nearby. But if the business is retail and strictly local in character, the necessity of removal to distant quarters may mean the destruction of a great part of the good-will.

ACTUAL GOOD-WILL VALUATIONS.—The figures at which large American corporations have placed their good-will in recent years are shown below:

B. F. Goodrich Co.	*$57,798,000.00
American Tobacco Co.	54,099,430.00
P. Lorillard Co. (trade-marks, brands, etc.)	21,137,927.00
Liggett & Myers Tobacco Co. (trade-marks, brands, etc.)	40,709,711.00
Republic Motor Truck Co.	4,805,936.00

* Omitted from balance sheet after 1919.

Pyrene Manufacturing Co. (patents, trade-marks, and good-will)	1,002,450.00
W. S. Light & Heat Co. (patents and good-will)	4,608,256.40
Cluett Peabody (good-will and trade-names)	18,275,000.00
F. W. Woolworth Co.	30,000,000.00
Butterick Co. (patents, good-will, copyrights, trade-marks, etc.)	13,893,271.00
Silver-Burdett & Co. (publishing rights, contracts, copyrights, etc.)	1,024,820.00
Hendee Manufacturing Co.	6,157,646.00
American Chicle Co. (good-will, trade-marks, etc.)	18,826,642.00

Sometimes valuations are assigned to good-will although it has not been brought into the balance sheet as an asset. Recently the advertising manager of the California Fruit Growers' Exchange estimated the value of the Sunkist trade-mark at $1,000,000, but the president of the exchange thought that it would be nearer $10,000,000. The value of the name *Bull Durham* has been estimated at between $10,000,000 and $20,000,000, and it is said that $10,000,000 has been offered for the *Camel* cigarette good-will. It is a familiar saying that such trade-marks as *Ivory Soap, Victrola, Kodak,* and *Uneeda* are worth a million dollars a letter.

In Sept., 1914, an appraisal was made of the estate of Joseph Pulitzer, former proprietor of the *New York World* and *St. Louis Post-Despatch*. The earning power of each was first estimated on the basis of average yearly earnings for 4 years preceding Mr. Pulitzer's death; but from this average a considerable amount was deducted to allow for certain favorable contracts for the purchase of white print paper which were soon to expire. A deduction of $100,000 was also made to allow for services of Mr. Pulitzer; also 6% was deducted on actual capital invested. Average net earnings left amounted to $196,411 for the *St. Louis Post-Despatch*, and $81,180 for the *New York World*. The appraiser capitalized these amounts on a 10% basis, resulting in a good-will valuation of $1,964,110 for the former paper and $811,800 for the latter.

There is a tendency among some companies to dispense with good-will altogether, because it is sometimes viewed with suspicion. The General Electric Co. has written its good-will down to $1, and the Victor Talking Machine Co. to $2. The tendency to treat good-will in this way was checked by the excess profits tax, but with the repeal of this a return to this policy may be expected.

The following extract from the *New York Times*, Nov. 3, 1922, refers to the valuation of the estate of Temple Bowdoin:

Transfer Tax Appraiser Berwin, in estimating the value of the good-will interest, accepted the average annual profits for ten years, and multiplied this sum by three. This is called the "purchase value," and is explained by George Brokaw-Compton in a treatise on good-will as follows:

"This multiple, or a number of times the average annual net profit, is held to equal the amount a purchaser would be willing to pay solely for the advantage of continuing the business."

Appraiser Berwin accepted "three years purchase" as the value of Mr. Bowdoin's interest in the good-will over the protest of Lafayette B. Gleason, counsel for the State Tax Commission, on the ground that the appraiser should have fixed the "purchase" at a higher multiple than three. In appraising an interest in the business of Franklin Simon & Co., the multiple of five was fixed by the Surrogate, while the good-will value of stock in Tiffany & Co. was estimated on a basis of ten years purchase. Stock in the Hearn department store was appraised on a multiple of five. It is expected that an application will be made in the Surrogate Court to increase the value of the good-will on the ground that a higher

multiple than three should have been used, and that the basis for the good-will fixed at the present time will be used in later taxation of estates of other members of the Morgan firm.

GOOD-WILL IN THE BALANCE SHEET.—Ordinarily intangible items such as good-will are shown at bottom of the asset side of the balance sheet. In the balance sheet form approved by the Federal Reserve Board the item is omitted entirely on the asset side; but is shown as a deduction from net worth on the liability side. This emphasizes the banker's point of view, viz., that in examining a balance sheet as a basis for loans the value placed on good-will should be **zero.**

SECTION 13

COST ACCOUNTING

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 13

COST ACCOUNTING*

Nature of Cost Accounting

DEFINITION.—Cost accounting is a branch of general, commercial, or financial accounting whereby the three components or elements of cost—direct material, direct labor, and burden, overhead, or expense—are calculated for the product made or service rendered in such manner that management can secure accurate and prompt information regarding, and can exercise intelligent and prompt control over, the activities of the business. The **control aspect** as well as the **technical aspect** of cost accounting is thus emphasized.

General accounting shows merely the total profit or loss of the business as a whole, whereas **cost accounting** discloses the profit or loss on each unit, whether job, special order, product, class of product, operation, or process. It is **accounting for units** that differentiates cost from general accounting.

Cost accounting originated in the factory, but it is not now confined to industrial enterprises. It is being used increasingly in wholesale, jobbing, and retail establishments—in fact, in all kinds of businesses, as shown by the growth in the use of uniform systems by many trade associations.

Detailed cost records are kept under one or more of the following types of cost systems (which will be explained later): special order; job; product; class; operation; and process. Furthermore, costs are recorded for some unit of measurement, such as the ton, yard, barrel, piece, etc.

Cost records are "tied into" the general accounting books by means of controlling accounts, such as Raw Materials, Work in Process, Finished Product, and those used for the analysis of expenses.

ELEMENTS OF COST.—As a unit of product goes through a plant it picks up the **elements of cost,** namely, direct material, direct labor, and manufacturing burden. Cost may be defined as any payment or charge for direct material, direct labor, or overhead, the purpose of which is to create marketable assets, finished products, or services to be sold.

CLASSIFICATION OF COSTS.—Costs may be divided broadly into **two large groups:**

1. Manufacturing or Production
2. Selling and Administrative

In the former group are heat, light, power, wages of employees, etc.; in the latter, salesmen's salaries, office expenses, advertising, etc. No attempt is made here to enumerate all items in the two groups.

One purpose of this classification is to make it possible to ascertain sep-

*This section is partly based on "Cost Accounting, Principles and Practice," in the preparation of which book the author of this section collaborated with J. P. Jordan, Consulting Industrial Engineer.

arately costs of the two primary divisions of a business. Responsibility for production and for selling and administration should not, under any form of management, be carried by the same individual. Need of this separation of responsibility is evident when factory and general offices are in different localities. If divided responsibility exists, means should be provided to control it. Control is dependent on information with regard to both the manufacturing and the selling branches of the business, and the information necessary is the cost data. Hence, a cost system should be so planned as to maintain a distinct separation between factory accounts and selling and administrative accounts, and to unify both classes of accounts by controlling accounts.

After costs have been classified so as to separate manufacturing from selling costs, they should be subclassified in order that a maximum of accuracy in recording may be secured. Costs are, therefore, further divided into:

1. **Direct costs**
2. **Indirect costs**

Direct costs are payments or charges for labor and material expended upon a definitely determined unit of product or service. Small costs, however, are not charged directly to the product, even when the latter can be determined, unless the increased accuracy of the records justifies clerical work entailed. It follows that indirect costs are those which cannot be charged directly, for reasons of economy or otherwise, to the product. An example of a direct cost is the cost of the raw material in a chair. Indirect costs arise from the following sources:

(a) Indirect material, such as rags used to wipe off chairs and tools, or new tools used to replace those discarded.

(b) Indirect labor—for instance, wages of foremen who supervise the employees in several departments where chairs are made.

(c) Fixed charges—depreciation, taxes, insurance, etc.

Adherence to the above cost classification increases the accuracy of the records, for this reason: By charging items directly to the cost units (when economical), the remaining costs (indirect costs) are less than if certain items legitimately "direct" were treated as indirect costs. Indirect costs are distributed over the product in as accurate a manner as possible, but such charging is less accurate than direct charging. For instance, raw material can be accurately measured and charged directly against the chair. The depreciation of the equipment used in manufacturing the chair cannot be determined by means of any measuring device. It must be estimated. Consequently, total depreciation of equipment is distributed over all units of product (chairs) made. Any charging which reduces the distributable costs, thereby increases automatically the accuracy of the cost records. Growing observance of the principle of direct—that is to say correct—charging has done much to improve the exactness of cost accounting.

In the early days of accounting, probably no distinction was made between direct costs and indirect costs, since concerns were interested in **total costs** of the business, not in **unit costs.**

IMPORTANCE OF PROPER COST BASES.—Before costs can be properly recorded and intelligently controlled, the right bases of costs must be established and the organization must be departmentalized along correct lines. Units of measurement, around which the costs are assembled, such as pound, piece, yard, are usually determined automatically by the nature of the product made or the service rendered.

More cost systems fail because **wrong bases of cost** have been established than for any other reason, because they lead to incorrect costs which in turn cause managerial policies to be based upon erroneous cost information. There probably is no industry in which it is possible to arrive at the final cost of the product without establishing a long series of **basic cost figures,** the various combinations of which in time will produce the final cost. Accuracy of final cost figures depends on the intelligence with which the various bases of figuring are established.

Another important point in connection with the establishment of the bases of cost is the use of cost figures made by the management itself, including the foremen or department heads of the plant who are responsible for the production of goods at lowest cost.

A cost figure which consists of a mass of data assembled for the sole purpose of setting selling prices falls short of the requirements of a manufacturing institution. Probably the most profitable result of cost-keeping is that of furnishing the means of a careful study of various operations, and, as a result, of making many reductions all along the line. Many figures lumped in one total are of no use to the operating department, even though the total may correctly represent the cost of a certain piece of product. It is of the utmost importance, therefore, before proceeding with any kind of cost work, to establish bases of cost which will not only give the final cost of product, but give it in such form that all operations from start to finish will be represented in a manner which will admit of close regulation.

CONTROL OF COST RECORDS.—In general accounting a **control account** is defined as one which shows in total details found in a subsidiary record. In cost accounting a control account may be defined as one which is charged or credited with all transactions in connection with a certain prescribed function of the business. Electric power and the departmental burden accounts are examples. One definition emphasizes the quantitative feature; the other, the functional feature of control accounts.

If costs are to be of constructive aid to management and to insure absolute accuracy of figures, a scheme of control accounts must be provided which furnishes a means of complete check on all expense and burden accounts. In addition, there must be a series of asset and liability accounts which will automatically provide figures for a balance sheet.

Control accounts may be divided into **three classes:**

1. Accounts with permanent balances, e.g., raw materials, supplies, finished stock, work in process, representing inventories and like data.
2. Accounts with accumulating balances through the year which control the operating burdens, e.g., departmental burden accounts.
3. Accounts which are used each month for the sole purpose of collecting the charges to expense accounts which, after collection, are distributed to burden accounts in the same month, e.g., steam, compressed air, electric power, trucking, etc.

Control accounts, once understood, are readily appreciated, first, because of the assurance they give of the accuracy of all expense and burden accounts; and secondly, because they so greatly simplify the work of cost procedure through the checks which they afford.

All obligations assumed by the company, such as raw materials, supplies, labor, and all other plant items, pass through the voucher register and are

charged to some originating control account—a material account, a pay-roll account, or directly to some expense or burden account.

The object of the controls is to insure the accounting for all moneys paid out. **Material purchases** are charged to the material accounts. The material goes into a stock room and cannot be issued until a requisition is received for it. The requisitions are credited to the material accounts at the end of the month, and debited to the control accounts affected. Direct material which enters a product is charged to Work in Process Material accounts, or simply to the Work in Process account if separate Work in Process Material, Work in Process Labor, and Work in Process Burden accounts are not kept. Material used on expense orders is charged to the control accounts representing the expense or burden receiving the benefit.

Labor is originally charged, when paid out, to the Pay-Roll account. How this labor has been used is shown on the time cards. At the end of the month, the labor is credited to the Pay-Roll account and debited to the control account which receives the benefit. Labor on direct orders is charged to a Work in Process Labor account, or simply to the Work in Process account. If the labor is expended on an expense account order, or an operating burden account, it is charged to the control account affected.

Materials, services, or other purchases made directly for the benefit of an expense or burden account, are charged directly to such control account from the voucher register through an intermediate account called an "Expense Ledger" account. This account is nothing more nor less than a vehicle account to assist in the transfer to the proper expense account.

The control accounts representing expenses such as electric power, trucking, etc., are themselves closed out at the end of the month and journalized to the burden accounts which receive the benefit of the expense.

Burden at standard rates is then credited to the various operating burden accounts, and charged to the Work in Process Burden accounts, or simply to the Work in Process account, in ratio to the number of direct-labor hours or direct-labor cost or machine hours represented by the work performed during the month. The direct material, direct labor, and work in process burden now rest in the control accounts as representing the **value of the material in process;** and are further represented in the files by the requisitions, time cards, and burden statements.

When a production order is completed, these three accounts are credited, and the cost of the order represented by the one figure is then charged to the control account of finished stock or of cost of sales.

DEPARTMENTALIZATION.—Another essential prerequisite of successful costing is intelligent departmentalization, which as the name implies is the division of a concern into departments or production centers.

Departments may be classified as follows: **direct** or producing, and **indirect,** non-producing or service. The first class is engaged in making the individual parts and assemblies that compose the finished product. The second class consists of those departments not directly engaged in manufacture of the product but which render services for the benefit of the direct or producing departments. For example, the tool design department may manufacture tools for individual parts on a job, which are chargeable thereto, or it may make small tools which are serviceable for a variety of jobs, the cost of the tools being treated as a part of the manufacturing burden. Other examples of departments whose work is partly productive and partly of a service character are the blacksmith shop, the machine repair shop, and the pattern department.

It is frequently necessary to provide for **subsidiary** or **minor departments** as well as for main departments. These minor departments are sometimes called **cost centers.** For example, the process of hardening certain parts in a tap and die plant may not warrant maintenance of a whole department for hardening alone. In this case a minor departmentalization is effected in order properly to collect and distribute cost to the parts. Another case of minor or subsidiary departmentalization occurs in a small foundry where one foreman is in charge of all operations. In this case, if proper costs are to be kept, it is necessary to have the following minor departments: melting, core-making, moulding, finishing, and pattern. In all cases, however, much thought and planning is necessary to arrange the most efficient divisions to produce the necessary results.

In many cases it may be difficult definitely to bound a department. The word department implies a separate room, rooms, section, or sections devoted to a certain kind or kinds of work. Where one department begins and another leaves off is an individual problem in each organization. It is difficult to lay down one set of rules or principles to be observed in departmentalization but the factors to be considered are:

1. Assignment of responsibility.
2. Nature of operations:
   (a) With respect to physical movements.
   (b) With respect to costing.
3. Location of operations.

The **assignment of definite responsibility** is necessary from the point of view alike of the management and of the cost accountant. Definite assignment of physical and financial responsibility constitutes the essential conception of departmentalization. Coupled with the assignment of definite responsibility is the necessity of providing means of reflecting results of this responsibility in figures.

The **second important factor** to consider after assignment of responsibility is nature of the operations for which each department head is responsible. In many cases it is necessary to unite, under one responsible head, two departments which have dissimilar operations. A case in point is a small machine shop which manufactures special machine tools with a force of 50 mechanics. If 40 of this number work on individual parts with machine tools, the other 10 do bench and assembly work, and 1 foreman supervises the work of the entire number, the two branches of work in the shop must be treated as two departments, so as to gauge results properly and obtain accurate costs.

An additional reason for this division of work exists in this particular case inasmuch as the plant sells two products: individual parts for repairs, and assembled units. Manufacturing cost per hour for the individual parts is much greater than manufacturing cost per hour for the assemblies, because depreciation, power cost of operating machine tools, maintenance cost of equipment, etc., are higher for individual parts than for assemblies. Since these items do not constitute part of the assembly burden, the assembly burden is a comparatively low figure per hour. Under a single rate of overhead, proper costs could not be obtained for either individual parts or assemblies. As a result, losses would be suffered on sales of repair parts because of insufficient selling prices based on excessive costs. Thus a firm using the single overhead rate would be doubly unfortunate because one of the essential objects of a business of this nature is to sell as many machine

units as possible in order to secure the repair part business which naturally follows. This point will be quickly recognized by those constantly dealing with the problem of **balanced sales.**

Location of operations is the third important factor to consider in departmentalization. Heavy work may be done on lower floors of the factory, lighter work on upper floors. For certain operations more light is required than for others. Operations of a like character may be grouped, although this is not always done. The factor of location of operations is influenced very materially both by assignment of responsibility and by nature of operations.

In case of two similar departments—such as two machine-shops, or two assembly departments—which are in separate locations, even though one person is responsible for both, the fact of similarity is no justification for combining either the two machine-shops or the two assembly departments into a single department. A similar department in a separate location should be treated as a separate department.

The **National Association of Stove Manufacturers**[1] considers the following factors in departmentalizing:

1. Similarity of work.
2. Scope of foreman's supervision.
3. Physical boundary.
4. Control of expenses.
5. Nature of overhead expense and equity of loading it pro rata on all goods produced.

The selection of the proper type of cost system applicable to given conditions should be made when departmentalization is being accomplished.

Purchasing and Receiving

PURCHASING.—Cost accountants must be reasonably familiar with the organization and administration of the purchasing and receiving departments in order to design and operate intelligently a system of records for these departments.

Generally speaking, the methods of the largest corporations are best because they have given more study to business problems and have the funds for research work. In these companies the purchasing agent or head of the purchasing department, whatever title he has, reports directly to the president; in some cases to the general manager.

Requests for purchases originate outside the purchasing department, and the purchasing agent, as the name implies, acts as an agent for other departments in procuring materials and supplies. **Departmental buying** is obsolete and should not be tolerated. Just as there is a vast difference between a salesman and an "order-taker," so there is as great a difference between an "order-placer" and a purchasing agent. The departmental head is an order-placer because he does not know market conditions. Before being sent to the purchasing department, requests for purchase should pass over the storekeeper's desk so that he or the stock record clerk may determine whether the goods are absolutely needed. He may be able to provide substitute material in some cases. However, he will advise the departments of good "buys."

The largest and best-managed companies centralize most of their purchases,

[1] See the uniform system issued by this association.

especially basic commodities such as pig iron, copper, tin, etc., in the main office, under the general manager or a vice-president in charge of purchasing; and sometimes under the general purchasing agent. However, some buying is done by subsidiaries, particularly in emergency cases. The following is a list of the **chief forms** used in accounting for purchases and receipts:

1. Request for purchase (purchase requisition)
2. Purchase order
3. Record of receipt of material
4. Purchasing department shipping order
5. Purchasing department debit and credit memos
6. Purchase record
7. Distribution stamp for invoices
8. Receiving report

HOLDEN MANUFACTURING CO.
BOSTON, MASS.

Pchse Order No. ________

Terms ________

Fr't Charges ________

Mat'l Rec'd - Date ________

Rec. Rep. No. ________

Prices O.K. by ________

Ext'd O.K. by ________

E't'd { Pchse Order by ________
Stock Record by ________
Exp. Lgr. by ________

Account	Amount	

Form 1. Invoice Stamp

1, 2. The form that starts the mechanism of purchasing is the **request for purchase** (purchase requisition). From an accounting standpoint the most important thing it should indicate is the account to be charged with the purchase desired. This is true, likewise, of the purchase order. This feature is known as **accounting at the source.** Much later confusion is saved

if this matter is observed. A purchase order should be drawn up so as to constitute a contract. To be sure as to this, a lawyer should be consulted.

3. A record of each receipt of material on each purchase order should be kept so that the status of all orders with respect to deliveries thereon may be known at any time.

4. If purchases do not pass inspection, the return to the vendors is authorized by a purchasing department shipping order. This form is not the same as shipping orders for finished product to be sent to customers.

5. Purchasing department **debit** and **credit memos** are used in the case of undershipments and overshipments, respectively; and in making adjustments of selling prices. Debit memos should be issued as soon as goods are returned,

Seventh Tentative Standard Invoice Form
embodying constructive criticisms of present form received by
THE NATIONAL ASSOCIATION OF PURCHASING AGENTS
19 PARK PLACE, NEW YORK.

Ord. No. & Date
Requisition No.
Contract No.
Shipped to
Destination

Invoice date
Invoice No.
Shipper's Order No.

This column reserved for use of customer.
P. A. Invoice No.
Voucher No.
CHECKED
With order
F. O. B. point
Price
Calculations
Transportation
Trans. Chgd. back

Terms:

To be written or printed here.

Name and address of customer to whom invoice is to be mailed may be put in this space.

Date Shipped
Car No. and Int.
How Shipped and Route

From

F. O. B.

DESCRIPTION	QUANTITY (SHOW UNIT)	PRICE PER UNIT	AMOUNT

Committees from the following organizations have co-operated in the development of this form.

The National Association of Purchasing Agents.
Disbursement Committee of Railway Accounting Officers Association.
National Association of Cost Accountants.
Div. VI Purchases and Stores of the American Railway Association.

Line spacing may be suited to machine or hand writing maintaining same relative positions. Sheet 8 1-2 inches wide and not less than 7 nor more than 14 inches long.

Four top lines to be replaced by shipper's name and address. Form may be moved down if more space is needed for shipper's name. A tolerance of 1-8 inch in either dimension is contemplated. Invoices longer than 7 inches to have dots or short rules printed on sides 7 inches from top to indicate point of fold for filing.

Certain blank spaces such as "Shipped To," "Destination," "Invoice No.," "Contract No.," "Car No." etc. are intended for use when such information is required to identify a shipment.

Above Materials received __/__192__and same is______satisfactory (Signed) ________________(Title) __________

Charge Account Approved Approved

FORM 2. Standard Invoice Form—National Association of Purchasing Agents

because it may be some time before vendors send credit memos. In the meantime the accounting for the return is not held up. The debit memo reverses the original accounting for the purchase.

6. A **purchase record** is used for significant purchases. As a history of the past, it acts as a guide in current buying.

7. The **distribution stamp** for invoices (a rubber stamp) is used in connection with the approval and distribution of invoices. (See Form 1.)

The National Association of Purchasing Agents has issued a **standard invoice form** which has a space for the usual information carried by the distribution stamp. By using this standard form it is not necessary to use the distribution stamp, thus greatly reducing the labor and expense of handling invoices. (See Form 2.)

RECEIVING.—About the only moot question in regard to **receiving room practice** is whether the receiving clerk should get a copy of the purchase order with quantities and all other data on it; or whether he should make a **blind count** of materials received. The first question should be answered in the affirmative if there is more than one employee in the receiving room. Otherwise, it is difficult to make him realize that his job is important. He should regard himself as receiving room manager and not as a clerk.

The chief record used in the receiving room is the **receiving report.** Three copies should be prepared. One is sent to the purchasing department for checking the quantity on the invoice; one accompanies the goods to the storeroom; and the third copy is signed by the stock record clerk and returned to the receiving clerk who files it for his own protection. All copies are signed by the receiving clerk and the inspection clerk. In a small company, the copy of the original purchase order which the receiving clerk gets serves as an adequate receiving report.

Some **essential matters** to be considered as regards the relation of cost accounting to purchases are as follows:

1. It should be definitely known who may initiate requests for purchases.
2. These requests should be written on prescribed forms which must be reviewed and approved by the purchasing department. They should describe accurately what is to be bought and for what purpose; and should indicate the account to be charged.
3. Orders for purchases must be filled out on prescribed forms. They must be checked against invoices and receiving reports with respect to prices, terms, quantities, and calculations.
4. Each purchase invoice must be handled in such a way that all authorizations, verifications, and approvals have been attended to; and should bear the name or symbol of the account to be charged.

See "Standard Costs" (p. 624) for data on standard material costs.

Cost Accounting for Materials

STOREROOM ORGANIZATION.—After materials, supplies, and finished product bought for resale have been received and recorded on receiving reports in receiving room, they are transported to storerooms which should also contain individual parts and subassemblies and finished product.

Considerable difference of opinion exists as to the organization of the stores department, or what is coming to be called the **materials control department** —a better and more inclusive term, because this department lays out and schedules production orders and purchase orders in addition to taking care of stowage of materials, supplies, etc., and the keeping of stock records.

The question of **centralization versus decentralization** of storerooms requires serious consideration. Modern practice is to establish as many substorerooms as necessary for convenience in manufacture, separating the storerooms which contain raw materials and supplies from those which house parts, subassemblies, and finished product. But there should be **centralization of stock records,** one set being kept to control inventories as a whole.

While general practice still is to place the storeroom under functional supervision of the purchasing department, there is a tendency to have the person in charge of the materials control department or storerooms report to the production department, or to the production control department, if

there is one; because successful production depends so vitally on having adequate material and supplies, etc., on hand. Furthermore, purchasing is such an important function in modern business that the head of this department should not be bothered with material control problems.

Generally speaking, stock records should not be under jurisdiction of the storekeeper, because such practice violates the check and balance principle of management. Clerical work in the storeroom should be reduced to a minimum.

CLASSIFICATION OF STORES.—"Stores," in a generic sense, should be classified into several groups. A serviceable classification is:

1. Raw material and supplies stores
2. Component part or "worked material" stores
3. Finished product stores
4. Scrap stores, including salvage, defective work, obsolete material, and by-products

STOCK RECORDS.—The following terms are synonymous with stock records: stock card; stock record sheet; stores record; balance of stores record; and book, running, going, continuous, or perpetual inventory.

Kinds.—In accounting for stores **four different kinds of records** may be used:

1. Bound books
2. Visible index
3. Stock cards
4. Stock record sheets

The **first method** is antiquated. The activities of firms which sell mechanical accounting equipment, filing devices, etc., have been largely responsible for the **second method**, which is used to advantage by some firms. **Stock cards** are more generally used than the other kinds of stores records, but are being supplanted in many instances by **stock record sheets** with linen-backed separating sheets which make for greater speed in record-keeping and a higher degree of permanence.

Technique.—The information on heading of the modern stock record is practically self-explanatory. See Form 5 (p. 350) of section on "Inventories."

Requirements Columns.—Requirements are estimates of sales or of production. Quantity of each class of raw material or finished parts needed for production or sale is entered in the requirements column. Individual requirements are entered in "item" column and each requirement is added to preceding requirements and sum is entered in "total" column, known as a running total column. Running total columns appear in the other sections of the stock record. The figures in the item column are obtained from shipping orders and from production control or planning department.

Appropriated Columns.—"Appropriated" or "reserved" columns show quantities of material or parts which are set aside for certain orders given priority over other orders. Physical segregation of these items is sometimes made but is not usually necessary. The "quantity" column shows individual appropriation for each production or shipping order. The first "total" column shows total appropriations to date by order numbers, while second "total" column indicates total appropriations to date for all order numbers. When total requirement for an order is appropriated, the entry in the requirements column is checked with last entry in the appropriated column. The appropriated amounts must be more closely compared with the balance of stock on hand and available than the required amounts, because the time of actual need is closer.

Ordered Columns.—Operation of these columns should be clear in the light of foregoing explanations.

Received Columns.—Quantities are entered in "received" columns from receiving reports which accompany stock into storerooms. Prices are entered later when invoices are received and passed along by the accounting department. Entry of quantities need not be deferred until invoices arrive.

Price is the unit cost of each quantity received, which may include not simply invoice cost but also inward charges. If an invoice covers more than one class of material, transportation charges applicable to each class are ascertained by distributing total transportation charges to stock records according to respective invoice cost or weight of each class of material. Occasionally, it may be advisable to treat inward charges, when small, as overhead, but this practice is not recommended.

For finished parts, "price" is the unit manufacturing cost up to time of stowage.

In brief, the received columns constitute the debit part of a stock record.

Issued Columns.—The "issued" section, on the other hand, is the credit side of a stock record. Entries are made from material requisitions—or **stores debit notes,** as they are sometimes called—for material issued to the shop; and from shipping orders for finished product shipped.

REQUISITIONS.—Material requisitions should carry the following information: date of issuance; quantity, size or number, description, weight, price, and value of quantity requisitioned; code order number to be charged; use to be made of material; name of storeroom which fills the requisition and initials of storekeeper; initials of the one who enters the requisition in stock record, the one who makes the extensions, the one who records the amount in cost records, and the one who signs the requisition, respectively. Various persons then are concerned with the handling of the requisition. Each requisition is prepared in duplicate, the originating authority keeping the duplicates in date sequence. The originals after being filled are passed along to the stock record clerk, then to the cost department. No requisition should be honored unless signed by one authorized so to do. It is proper to have more than one class of material on the same requisition, if for the same order. **No requisition** should charge more than **one order.** This practice eliminates many errors.

MATERIAL CREDIT SLIPS.—Returns of material to storerooms for one reason or another are first entered on material credit slips—or **stores credit notes,** as they are sometimes called—and from then on, the reverse of the original accounting, followed when requisitions for them are filled, is adopted.

VALUE OF MATERIAL SPECIFICATIONS.—Recording consumption of material in the best manner is not possible without specifications of material. The value of specifications is well known and the advantages are simply listed here without elaboration: (1) they provide definite knowledge of kind and amount of material which enters each product; (2) they facilitate purchasing, scheduling, control and costing of material; (3) they make for standardization of purchases and operations; (4) they save clerical work.

PRICING MATERIAL REQUISITIONS.—The two chief methods of pricing material requisitions are actual cost and average cost.

The **actual cost method** is best for materials other than staples. However, the actual price should be used where a staple of one general kind is in stock but varies slightly in quality. Prices of stock first purchased are used first on requisitions, then prices of second lot purchased, and so on. Requisitions

of bulk material, such as lumber, are priced at original cost when practicable to keep costs by lots.

While the **average cost method** involves more work than the actual cost method, and consequently is more open to error, nevertheless it is the best method for staple materials, standard individual parts, and finished product.

Current prices in costing may be used, although actual costs may be used on stock records when requisitioning materials. The procedure is illustrated by following ledger accounts:

Pig Iron Control

(1) Contract price.	(2) Average actual contract price.

Vouchers Payable

	(1) Contract price.

Pig Iron Adjustment (P. & L. Acct.)

(2) Average actual contract price.	(3) *Iron Age* price of pig iron for month.

Melt (Work in Process)

(3) *Iron Age* price of pig iron for month.	

The balance of the Pig Iron Adjustment account is closed into the current Profit and Loss account, since it is a nominal (profit and loss) account.

This practice is followed by certain industries which desire to accumulate the speculative profits or losses on purchases, and is in harmony with the principle of basing costs on market conditions.

Running Totals.—The last column in the various sections of the modern stock record form is known as a running total column, showing cumulative figures to date. By having such column in the "received" and "issued" sections, the need of maintaining a "balance on hand" column is eliminated, provided stock records are posted by hand and not by a mechanical device. Several reasons may be advanced in favor of this practice, as follows: (1) the number of times the balance on hand is needed is small in comparison with the number of times it is computed; (2) the balance when needed can

be quickly obtained by subtracting total requisitions from total receipts; (3) by use of running totals most of the work on stock record is addition, and fewer clerical errors are made in addition than in subtraction; (4) balances on hand determined by the "balance" method disclose only a net result, but under the "running total" method they not only indicate such information but also enable questions as to quantity for any period to date to be instantly answered.

But if stock records are posted by a mechanical device, the "balance on hand" column may as well be used, because requisitions and balances on hand are entered simultaneously.

Relation of Columns.—In general, the relation between the different columns of stock record sheets may be summarized as follows:

1. "Requirements" less "appropriations" equals balance of materials or parts, etc., not scheduled.
2. "Requirements" less "ordered" indicates whether requirements are covered.
3. "Requirements" less "received" shows how far behind the plant is in getting material and parts needed for requirements, either from outside or from manufacture.
4. "Requirements" less "issued" shows requirements not issued from stock.
5. "Appropriated" must never be greater than "received."
6. "Appropriated" less "issued" equals balance of appropriated material not issued.
7. "Ordered" minus "received" equals amount due on orders, either purchase or production.
8. "Ordered" must exceed "requirements" by amount of the minimum.
9. "Received" less "issued" equals balance on hand.

Values to be Shown in Stock Records.—The best practice dictates that not only quantities but also values appear on stock records, for following reasons:

1. It is the only way to price out correctly material used. Inventory balances are then correct and accurate financial statements can be compiled.
2. It saves clerical work because the stock record clerk prices each requisition. Otherwise it would be necessary to enter the quantity of each requisition on the stock records, to send it to someone else for pricing, and then to still another for computing and cost work.

Furthermore, pricing should be done by the stock record clerk, since the stock record is the only record showing when each lot of material is exhausted.

The purchasing department is unable to price requisitions, not knowing the exact status of lots, unless it keeps a duplicate set of stock records, which is not feasible and is, furthermore, unnecessary.

TAKING OF PHYSICAL INVENTORY.—Taking the physical inventory all at one time is usually a bugbear. Some firms, today, inventory a few items every day and check them against related stock records, thus eliminating the necessity of a shut-down for purpose of inventorying. During the year each item should be inventoried at least once and compared with corresponding book inventory figures.

The modern and best way of taking a physical inventory, when done at one time, is known as the duplicate tag method. It is described in Jordan

and Harris' "Cost Accounting," Madison Cartmell's "Stores and Material Control," and F. W. Kilduff's "Standard Inventory Manual." See section on "Inventories."

INVENTORY ADJUSTMENTS.—Physical inventories usually differ in their results from book inventories. Nevertheless, the latter if properly kept are usually correct to a reasonable degree. Some **causes of difference** between these two kinds of inventories are: errors and omissions in recording, waste, shrinkage, changes in moisture content, inaccurate weighing, measuring and counting, etc. Differences should be run down, if possible, and corrected or adjusted. Adjustments may be satisfactorily made in the regular columns of stock record, but sometimes are entered in two special columns, "over-credit" and "under-credit," respectively. If adjustments are numerous a special record, **inventory adjustment sheet,** may be provided. Adjustments are debited or credited, as case may be, to an Inventory Adjustment account, or "Over, Short, and Damaged" account, and credited, or debited, correspondingly to the proper material inventory controlling accounts.

After details are adjusted on the stock records, the material controlling accounts "tie in" with subsidiary records—the stock records.

SCRAP AND DEFECTIVE WORK.—An important problem in cost accounting for materials is the treatment of scrap and defective work.

Sources of scrap may be classified as follows: defective or unsuitable material purchased outside, avoidable scrap, and unavoidable scrap.

If the first class of material can be saved, cost of correcting it should be charged back to vendor provided there is a prearranged agreement to this effect. If rejected and returned to vendor, it is billed to him. Any costs incurred in working on the material before defects are discovered, however, cannot be charged to vendor.

Avoidable scrap is the most important of the three classes enumerated. Some subclasses of the major class are: material spoiled because of operator's fault, operating conditions, or errors in drawings, material obsolete because of changes in design, etc.

Unavoidable scrap consists of borings, clippings, turnings, sweepings; product that has been used for experimental purposes; and obsolete and worn-out equipment.

The ideal method of scrap accounting is to establish a salvage department with a set of operating accounts. This department is charged with expenses which it incurs and also a pro rata share of general expense. If it is not considered feasible to open a complete set of operating accounts for the salvage department, because of the clerical work involved, then a scrap account should be opened, which would be charged with material, labor, and expenses in connection with scrap, and credited with salvage value of scrap transferred to stock or other departments, or the value of scrap sold. Any balance in the account at end of year which does not represent scrap on hand should be closed into Profit and Loss account.

It is impracticable and in some cases impossible to credit one kind of scrap directly to production orders, namely, that which results from necessary reworking of material. In this case scrap should be credited to raw material costs, not to general overhead. Crediting scrap to orders is the ideal method when possible or practicable.

When actual amount of scrap which results from each order or item cannot be determined, **standard unit material costs** to be used in costing requisitions

and in charging orders, and standard scrap, salvage, or waste percentages, may be established and credited to orders.

This method has been found suitable in continuous production plants. The argument that it involves too much detail is met by the fact that after standards are set they need not be changed until conditions change.

Another method of handling scrap is as follows: Cost of scrap is credited to work in process and charged to whatever account is designated to receive the cost of the spoiled work pending decision as to either reclamation or final scrapping. If scrapped, a Scrap account is charged and the account which was originally charged with the cost of scrap is credited. When scrap is disposed of, the Scrap account is credited. Any balance in the account is of course cleared into the Profit and Loss account.

The original records for scrap, whatever accounting method is used, are the scrap tickets.

STORAGE CHARGES.—Distributing storage charges over material stored upon the basis of respective weights or values of the material, in some cases, is complex and involves too much detail, but in others is practical. These charges may be satisfactorily handled in the latter cases by including them in general overhead, except where a storeroom serves one department, in which case the storeroom expense should be included in the burden of such a department.

STOCK LIMITS.—The upper limit of stock is known as the **maximum,** and the lower limit, the **minimum.** When material or finished product reaches or falls below the minimum, a purchase order or a production order, as the case may be, is issued for amount decided upon as the **quantity to order.**

The chief factors considered in establishing stock limits for material and finished product are:

Material	Finished Product
1. Purchasing period, or time elapsing between sending of purchase order and receipt of goods.	1. Production period, or time it takes from issuance of production order to the shop until goods are fabricated and ready to be sent to finished stockrooms, warehouse or shipping room.
2. Probable material requisitions.	2. Probable sales.
3. Margin of safety.	3. Margin of safety, varying usually 10% to 25% of probable sales for production period.
4. Economical quantity to purchase, considering terms, prices, deliveries, etc.	4. Economical run, or the largest number of units of product most profitably put through.

Overhead or Burden

BURDEN RATES.—Progressive cost accountants favor calculating and applying overhead or burden by the use of predetermined or standard departmental burden rates. An outline of this procedure follows:

1. Determining normal capacity for direct or producing departments and business as a whole.

2. Determining normal expenses and burdens for normal capacity.

3. Predetermining standard departmental burden rates.

4. Selecting equitable bases for distribution of overhead to expense and burden accounts.

5. Current charging, through monthly journal entries, of actual burden incurred to expense and burden accounts.

6. Current closing, through monthly journal entries, of primary expense accounts into secondary expense accounts, which in turn are closed into departmental burden accounts, one departmental burden account being kept for each productive department.

7. Preparing monthly expense and burden statements.

8. Applying standard departmental burden rates which charge Work in Process Burden accounts and credit Burden Credit accounts. The detailed charges for applied burden are entered on individual part cost sheets or assembly cost sheets as the case may be.

9. Transferring the burden balance of each productive department—which is the overabsorbed or underabsorbed burden—to Profit and Loss account.

10. Recording net result of this summary account in current Profit and Loss account as a deduction from or addition to gross profit—as the case may be—before net manufacturing profit is ascertained.

11. Preparing statements which show monthly comparisons of burden.

12. Revising departmental burden rates when standard burden rates are no longer applicable to current conditions.

Normal capacity, of course, varies for different departments and different industries but, generally speaking, is regarded as 80-85% of practical capacity. In some cases it is greater or less than this figure. It cannot be expected that a plant will always operate at practical capacity, but 80-85% of practical capacity would be considered a good rate of operation.

Some cost men differentiate between theoretical capacity, practical capacity, and normal production.

In non-technical language **theoretical capacity** may be stated as the number of units a machine can produce in a given time under ideal conditions, or, in the case of hand labor, the number of units that can be turned out by the best workers.

Practical capacity, on the other hand, is commonly regarded as 85% of theoretical capacity. This means that an arbitrary allowance of 15% is made for single purpose equipment, spare machines for use in emergencies, and, in the case of hand labor, for losses due to absenteeism, labor turnover, etc.

Normal production is some percentage of practical capacity. It is very important that normal production be correctly established. It should be the purpose so to set burden rates that 100% of normal burden would be exactly absorbed in current costs when operating at 100% of normal. It is obvious, therefore, that the determination of normal production establishes the cost level for the product and may have a vital effect on the successful conduct of the industry. The determination of normal production is so important that it should not be established by the accountant alone but as the result of consultation with the management.[2]

Most cost accountants think of theoretical capacity as the 100% working

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[2] See Official Publication, Vol. III, No. 19, of the National Association of Cost Accountants, entitled "Normal Burden Rates," by Charles Van Zandt

time of a machine in hours, without regard to the units it may turn out in this time. The burden costs of the individual units will be materially affected by a greater or lesser number of hours charged against the orders.

Most cost accountants, however, regard as normal capacity the figure of 80-85% of practical capacity as stated above, and do not calculate and show theoretical capacity on departmental burden statements.

In determining the normal capacity of the business as a whole, the capacity of the **limiting department,** or the "neck of the bottle," should be taken, although in some special cases each department should be considered separately in determining total normal capacity of the business as a whole.

A pertinent question is, Why use normal or standard rates? The futility of loading all the burden in a given period on subnormal production has been recognized for some time. If actual burden were always charged to current production, either one of two things might happen. If production were plus normal, the actual burden would be relatively low, provided the concern had not reached the point of diminishing returns, because there would be certain burden items that would be fixed and would not vary directly with changes in the volume of production. Therefore, the unit costs would be relatively low because there would be a relatively large number of units of product over which to distribute burden. Selling prices based on these low costs, when production was plus or above normal, would not enable the concern to build up substantial enough reserves for a rainy day. Conversely, if production was very low, unit costs would be very high. Selling prices based upon relatively high costs would not bring in business and the manufacturer would simply accentuate his idle condition. Therefore, selling prices, ordinarily, should be based upon standard costs, provided the manufacturer is not simply using the competitive market prices in establishing selling prices.

Normal or standard burden costs, however, and other normal or standard costs should not be followed too slavishly in establishing selling prices. Until a firm has had sufficient experience to set normal burden rates intelligently, it should use **tentative rates.**

As stated, burden should be handled on a normal basis except under the **process type** of cost system, where the total actual cost, including burden, is divided by the number of units made to get the actual unit cost. However, normal burden can be used in a process system, although usually it is not where one product is manufactured. It is easy to picture mentally the normal burden in comparison with the actual burden.

Before some burden items are collected in departmental burden statements for productive or direct departments, they pass through intermediate primary and secondary expense accounts, such as steam, compressed air, electric power, etc. To be sure, some items like indirect material, repairs, etc., may be charged directly into these departmental burden statements. All burden ultimately must come to rest in some departmental burden statement.

Before expense and burden can be handled properly, a **code of standing orders** must be adopted for each indirect or service department and for each direct or producing department. Firms frequently prepare a booklet containing the standing orders code. The same code number should be used for the same kind of expenditure in every department so that a consolidated burden statement of all departments may be prepared. While some departments may incur certain expenses that others do not, these cases do not make it impossible to prepare a consolidated statement because after certain standing orders there will be no amounts recorded—the spaces being left blank.

A cost accountant is unwise who attempts to lay out a code of standing

orders without first having familiarized himself with the physical conditions in the shop.

DISTRIBUTION BASES.—The bases of distribution of the chief burden items will now be considered.

Rent.—When a company rents a plant, it should obtain from owners a detailed valuation of the various buildings occupied. This information is of value in prorating the rental charge. In many cases the proration is made to departments on basis of square feet of areas occupied, considering that certain areas are more valuable than others. Some concerns use **cubic feet** as a basis, but this factor is not the only one to consider—for instance, a foundry with a high roof does not cost as much as a three-story building of the equal height. The **square-foot** basis, generally speaking, is satisfactory in distributing rent to departments.

Fire Insurance.—If a company belongs to a factory mutual company, its insurance rates are apt to be low, and consequently the insurance may be charged to general manufacturing expense. But if it is not a member of such a mutual company, and insurance rates are high, then cost of premiums may be distributed to departments on the basis of valuations made for insurance purposes.

Insurance is usually taken out separately on buildings, equipment, and inventories, and, if possible, should be distributed to these divisions of assets. If it cannot be traced to them, then it should be distributed on the basis of the percentage that each class of assets bears to total of all assets.

Liability and Compensation Insurance.—Liability and compensation premiums and rates are based upon amount of pay-roll paid out and hazards of the various operations. Premiums are estimates and are paid in advance, being adjusted quarterly to the actual pay-rolls. Where occupations are very similar, as in a small plant, the insurance charge per department may be made on a per man basis according to number of men in the department.

Taxes.—Where a company owns its plants, distribution of taxes on buildings is made in much the same manner as rent, when the taxes are large. If small, they may be treated as a general manufacturing expense, which is apt to be the case when plants are outside the high tax areas. Taxes on personal property should be distributed to departments upon the basis of the respective values of the equipment.

Depreciation.—Unquestionably, depreciation may be handled most satisfactorily if a **plant equipment ledger** or plant asset record is operated. The depreciation of buildings and equipment should be treated separately in the accounts.

The plant ledger may be kept in either a loose-leaf book or a file of cards. Sheets assembled in binders is probably the preferable way to keep this record. In a large plant several different forms, all of uniform style and size, may be used. One form may be employed for individual units, such as large machines, trucks, etc.; another for buildings; another for small tools; and still another for miscellaneous equipment.

For individual units of equipment the form has spaces for the following information: complete description, make, when bought, age, prospective life, numbers, original cost, reduced value, estimated scrap, salvage or residual value, capacity, location, operating requirements, rate of depreciation, adjustments of value, depreciation rate per hour, day or month chargeable to costs. The description should include all attached parts. The ledger should be subdivided by departments so that the total monthly depreciation charge for each department may be ascertained.

The first step in the installation of a plant ledger is to make an analysis of the general plant account. In many cases it is impossible to make this analysis for a long period antedating time of installation of the ledger.

Sometimes the plant account is carried at a value appraised by the directors at time of purchase or reorganization. In other cases plant asset values are established by means of an appraisal made by an appraisal company.

Some companies keep an **asset disposal record** into which the original sheets or cards for the items concerned are transferred at the time of the disposal of assets.

The sum of the items in the plant ledger—a subsidiary record—should of course agree with the control account or accounts for plant items in the general ledger.

Depreciation rates used for the different classes of equipment will, of course, vary. Depreciation on building values is distributed to the various departments upon basis of relative value of the floor area occupied by each department. Depreciation on the section of the building devoted to the general superintendent's office, etc., should be charged to "General Manufacturing Expense." Mortality tables, or tables of depreciation rates, have been adopted by some trade associations which have uniform cost systems.

Most accountants favor the **straight-line method** of handling depreciation. In order to tie in all costs, depreciation on the cost records should be the same as that figured for government taxes. Otherwise adjustments will have to be made at the end of the year.

Steam Expense.—Steam is used to run steam engines in the power plant, to heat office buildings, and for manufacturing processes. Consequently, some of the steam expense is distributed to the Electric Power account and the rest to the General Manufacturing Expense account. The distribution should preferably be made from the readings of flow meters showing steam consumption. If such meters have not been installed, the chief engineer or master mechanic should prepare estimates as accurately as possible as to the steam that each department will use. The estimates are then used in making the distribution of steam expense.

Power.—While the use of meters is the most scientific way to measure departmental consumption of kilowatt hours, nevertheless, probably a large majority of concerns are using horse-power ratings because of the expense of installing meters and the small variation in power consumption between different departments found to exist in some plants.

If a company is maintaining a centralized power plant to serve two or more of its own manufacturing units, the procedure in treating power cost is as follows. **Fixed rates** for power and steam are determined based upon normal production From the consumption as determined from meter readings, each plant and department served is charged at these fixed rates. This method results in a **balance undistributed,** which is the net cost of unused capacity. This additional charge made against each plant is arrived at by finding the difference between the cost of power consumed by the plant at normal fixed rates and the amount which represents its proper share of the total expense of the power plant for the month. This latter figure is based upon both the ratio of normal consumption of each plant to normal power plant capacity, and the ratio of actual consumption of each plant to total actual production of the power plant.

Too many concerns make entirely too detailed distribution of power costs, particularly where power cost is comparatively small in amount. Here is a splendid opportunity for cost simplification.

General Manufacturing Expenses.—Whenever possible without too much detailed costing, items should be kept out of the General Manufacturing Expense account and entered in segregated expense accounts, such as Purchasing Department, Pay-Roll Department, Cost Department, General Superintendent's Office, etc. The General Manufacturing Expense account is usually the last one to be prorated to direct or producing departments.

In the past it has been rather common to distribute this expense to departmental burden accounts on the basis of the respective direct-labor cost of each direct department. This basis is erroneous because the expense is incurred as much for the benefit of indirect as for direct labor. Therefore, total labor (direct and indirect) hours, total labor (direct and indirect) cost, or the total number of men, are more accurate bases to use.

General manufacturing expenses are distributed according to the ratio that the total pay-roll of each direct or producing department bears to the total pay-rolls of all the direct or producing departments.

When many departments operate at normal capacity, it may be unfair to distribute all of the general manufacturing expenses according to the above bases. For that reason this expense may be distributed upon the basis of **a standard charge** per dollar of total pay-roll based upon normal capacity throughout the plant. This standard charge is determined by dividing total normal general manufacturing expense by total normal pay-roll. This charge is then applied to total pay-roll of each department to get the share of general manufacturing expense to be borne by that department. Hours instead of dollars are sometimes used as a basis for such charging. Unabsorbed balance of general manufacturing expense is closed into unabsorbed burden for the whole plant.

In applying burden, normal burden is divided by the burden basis in a normal period to get the predetermined burden rate—burden rates, as stated before, being arrived at for each direct or productive department. These rates are then applied to the job, product, or operation, etc., depending on the type of cost system in use, in a current period, to get detailed burden applied or earned, according to burden basis selected. This burden is shown in the burden statement for each department, together with the actual burden which is segregated opposite the standing orders. The total burden applied for all departments is charged to a Work in Process Burden account or simply to the Work in Process account. The burden credits are made to Burden Applied or Burden Credit accounts. Differences between actual and applied burdens are handled in the manner explained on p. 626.

METHODS OF APPLYING BURDEN.—The advantages and disadvantages of the different methods of applying burden will now be discussed.

Direct-Labor Cost Method.—This method is simplest and easiest to operate because pay-rolls must be prepared and labor costs can be easily secured for burden purposes. The method is serviceable where production is uniform and continuous, where labor is the chief factor, and where wages are fairly uniform.

But the advantage of knowing elapsed time for scheduling and planning purposes is lost under this method. It is not suitable where production is fluctuating and seasonable, where wages paid on the same class of work are not uniform—in this case the product of workers earning a bonus being penalized—and where bench work and machine work are performed in the same department.

The severest criticism of the method, however, is that it is based on cost rather than time, and burden bears more of a relationship to time consumed than to labor cost.

Direct-Labor Hours Method.—The direct-labor hours method, however, is based upon time, which is the chief reason for its accuracy. It is a simple method to use where production is uniform. Disadvantages of the method are small when compared to the advantages. The method may be inaccurate where machine and bench work are performed in the same department, and where production fluctuates.

Machine-Hour Rate Method.—In modern plants technical processes are intricate and complex. Homogeneous operations are limited to small areas. Machines and equipment are vastly different, and each machine or group of similar machines in one department affords a natural rather than an artificial unit for the incidence of burden, provided machinery is the chief factor in production, also the quantity of production is large.

While there is considerable detailed work involved in first arriving at machine rates, thereafter the machine rate method is easy to apply. There is no question, however, but that the machine rate has been overdone and the detailed work in determining the rates in many cases has not been justified. If the machine rate records are not carefully kept, ridiculous inaccuracies result. Another disadvantage raised against the method is that it is not applicable where machine work and bench work are done in the same department.

Machine Rates.—Differences of opinion still exist as to the extent to which machine rates should be used in distribution and application of burden. Some cost accountants consider all overhead elements in arriving at a machine rate, and in some cases even labor is included where it is difficult if not almost impossible to record labor costs against a particular product going through a machine because of the fact that operator may be changing jobs so frequently. A principle observed in determining machine rates is: The job should be charged with the various items of manufacturing cost as it has been benefited from their having been incurred.

Use of machine rates does not mean that a machine rate is calculated for each individual machine or operation. Sometimes machines are grouped together in a **production center** where there is uniformity as to the nature of the work performed, the amount of investment employed, or the service rendered.

Other cost accountants contend that there are **three main items** that fluctuate primarily with the running time of machines, namely, depreciation, power, and maintenance. Consequently, they use a supplementary or superburden rate for these items only, and handle the rest of the burden items through a "regular" departmental burden rate. Cost sheets, therefore, have columns showing separately the regular burden and the superburden. Opponents of this practice contend that it makes use of two burden rates when one rate would serve the purpose just as well; and that in many cases all burden should be considered in setting machine rates.

The application of machine-hour rates to boy labor where men and boys work on the same machines, raises an interesting question. Men are apt to do jobs more quickly than boys, and while men get a higher wage, the overhead on the jobs is less in the case of the men because of the shorter time they take There seems no adequate reason why **differentiated burden rates** for man and boy labor should be employed in this case in costing the product If boys are adequately trained, higher costs of product during the training period will be reduced later when the training period has ceased.

An account called **Training Expenses** may be set up, against which is charged that portion of the cost by which the boy's labor, plus the machine-

DEPARTMENTAL BURDEN STATEMENT

Month. . . . .

Year. . . . .

Item	Standing Order Code No.	Normal	This Month	Last Twelve Months
Indirect Labor				
Foremen and Assistants	1–100			
Inspection	1–101			
Handling Product	1–102			
General Labor	1–103			
Etc.				
Total				
Maintenance				
Machinery	1–110			
Buildings	1–111			
Tools	1–112			
Etc.				
Total				
Supplies				
Small Tools	1–120			
Oils and Waste	1–121			
Miscellaneous	1–122			
Etc.				
Total				
Proportioned Charges				
Depreciation	1–130			
Taxes	1–131			
Insurance	1–132			
Steam	1–133			
Power	1–134			
General Expense	1–135			
Etc.				
Total				
Grand Total (Actual Burden)				
No. Direct-Labor Hours				
Standard Burden Rate				
Burden Applied at Standard Rate				
Balance (difference between actual and applied) to Profit and Loss Account				

Form 3. Departmental Burden Statement

hour rate, exceeds the experienced workman's labor, plus the machine-hour rate. This practice, however, may lead to abuses on the part of the shop in diverting perfectly proper and legitimate excessive costs.

STANDING ORDERS.—A code of standing orders or standing order numbers should be prepared, showing the proper analysis of burden expenditures; there being a standing order for each major burden item, such as indirect labor, depreciation, taxes, repairs and maintenance, etc. This code cannot be drawn up until one is reasonably familiar with operations in the plant and activities of the service departments.

BURDEN STATEMENTS.—A burden statement for each direct or productive department is prepared each month. A sample statement appears in Form 3. This form contains a column "normal" which appears rather infrequently on burden statements. Usually the normal or standard burden is calculated for each department as a whole and not for each standing order on the statements.

A consolidated burden statement of all departments should be prepared monthly.

FACTORY LEDGER ELIMINATED.—One progressive step in cost accounting within the past few years has been the elimination of the so-called factory ledger. This has been accomplished by the increasing use of expense and burden statements which really constitute the factory ledger so far as burden is concerned, because they show a sufficiently fine analysis. Where this is the case, a group account known as the "Factory Burden Cost" can be opened in the general ledger, this account showing actual burden cost of all departments; and another account, "Factory Burden Absorbed or Applied," showing, as the name implies, the total factory burden absorbed by applying the predetermined departmental burden rates.

Space will not permit of a treatment of the other steps listed in the outline of burden procedure. However, they are either self-explanatory or pretty well understood by cost men.

Accounting for Labor

BASIC LABOR RECORDS.—Accounting for labor in the plant, pay-roll office, and in connection with burden costs, has the following objectives:

1. To determine wages due each worker in order that pay-rolls can be prepared, and so that no worker will be paid more than he has earned.
2. To determine labor costs by units, production orders, operations, etc., and by departments, so that proper direct-labor costs can be entered on cost sheets.
3. To obtain data for calculating burden and for charging departments with indirect labor.
4. To procure information for proper control of labor costs.

The following is a brief description of the essential forms used in reaching these objectives:

1. **Weekly in-and-out card.** Each worker has one of these cards which he uses in ringing "in" and "out" on the time clock. The difference between the "in" and "out" time is supposed to indicate the time the worker has been in the plant each day and is checked against the total elapsed time as shown on the time cards turned in for each

worker and time tickets for idle time turned in by the timekeeper. Thus the idle time of the worker is ascertained. The clock cards also are of service to the pay-roll department in locating differences in the pay-roll.

2. **Late and absent and overtime reports.** The use of these reports is implied in their names.

3. **Time cards.** Time cards vary according to the kind of labor information desired and the wage system in use, particularly the latter.

There are two chief kinds of time cards—one for direct or productive work and another for indirect or non-productive work. The first indicates the labor chargeable to a production order (Form 4); the second, the labor chargeable to a standing order (Form 5). A **recapitulation card** (Form 6)—called the bonus and premium report—is used in conjunction with the direct-labor card under the premium or bonus system of wage payment.

Time cards should be prepared by a time or dispatch clerk instead of by the workers. If the plant is large, there may be several clerks who perform this function, each one being able to keep the time of from 60 to 100 workers. Workers dislike "bookkeeping" of any kind. Furthermore, it is more economical to have clerks for time recording. Actual tests have shown the latter practice to be decidedly the cheapest.

In some concerns, upon receipt of bills of material and blue-prints, the time-setter prepares a time card for each operation or each job. He shows thereon the time allowed for the operation and the machine or group of machines on which the operation is to be done.

All time cards are forwarded to the pay-roll department and there used in drawing up pay-rolls. In some cases time cards are first forwarded to the production department, and then to the pay-roll department, and later to the cost department, the same records serving all purposes.

Bonus or **premium cards** are made out in duplicate. The original is given to the worker so that he can check up his earnings and calculate his total wages for the pay-roll period. The duplicate is sent with the product to the inspector of the product, and later it is forwarded to the pay-roll department. Bonus is usually figured weekly and not daily. It is good practice to insert in the worker's pay envelope a slip showing how his bonus was figured.

Daily statements of piece-work earnings may be given to the workers, although they usually keep their own count of piece-work.

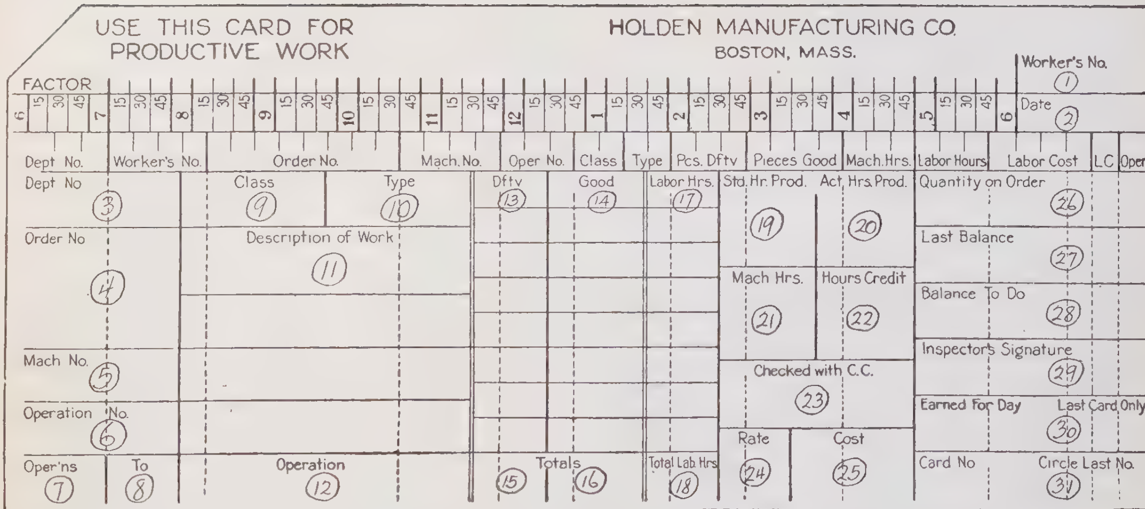
Labor accounting is greatly expedited by time-recording devices and tabulating equipment.

Some special matters arise in labor accounting. These will be briefly described.

LOANED WORKERS.—The first has to do with loaned workers. The following practice in recording loaned labor is somewhat detailed and is not used by many plants.

When no burden charge is involved, in the case of the loaned worker, his pay-roll number is not changed. The time or dispatch clerk of the department (home) where the worker is customarily employed makes out two cards, which indicate, among other things, the department to which he is loaned. One card is kept in the home department; the other is turned over by the worker to the time or dispatch clerk in the department to which the worker is loaned. The clerk sends the time cards of the worker back with him when he returns to the home department. Then they are forwarded to the pay-roll department.

Some contend that it is not necessary to use special records, such as loaned labor reports, for workers transferred temporarily from one department to


USE THIS CARD FOR PRODUCTIVE WORK

HOLDEN MANUFACTURING CO.
BOSTON, MASS.

Worker's No. (1)

FACTOR

6 15 30 45 7 15 30 45 8 15 30 45 9 15 30 45 10 15 30 45 11 15 30 45 12 15 30 45 1 15 30 45 2 15 30 45 3 15 30 45 4 15 30 45 5 15 30 45 6

Date (2)

Dept No. | Worker's No. | Order No. | Mach. No. | Oper No. | Class | Type | Pcs. Dftv | Pieces Good | Mach. Hrs. | Labor Hours | Labor Cost | L.C | Oper

Dept No (3)
Order No (4)
Mach No. (5)
Operation No. (6)
Oper'ns (7) To (8)

Class (9) Type (10)
Description of Work (11)
Operation (12)

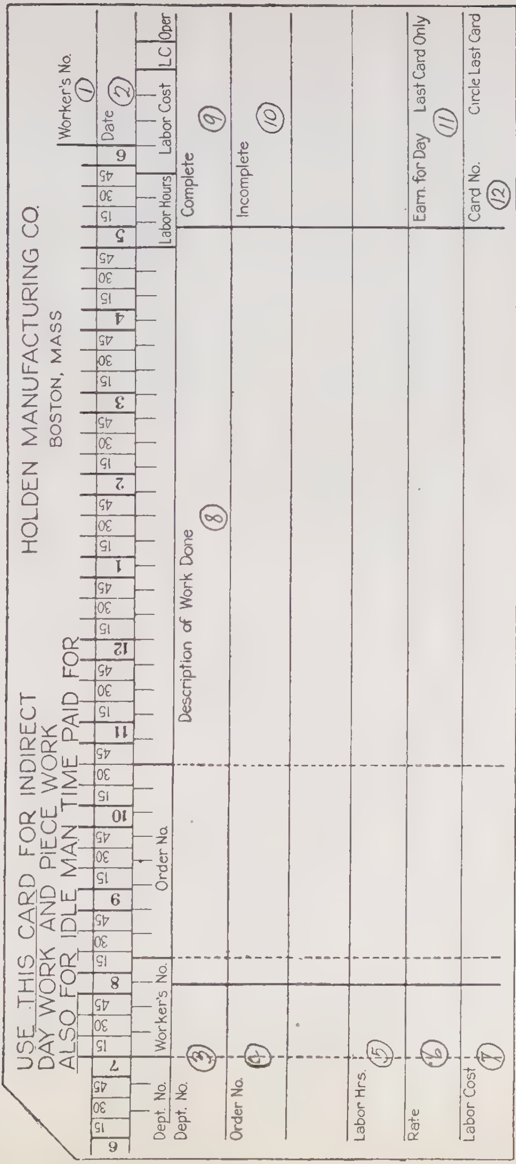
Dftv (13) Good (14) Labor Hrs. (17)
Totals (15) (16) Total Lab. Hrs (18)

Std. Hr. Prod. (19) Act. Hrs. Prod. (20)
Mach Hrs. (21) Hours Credit (22)
Checked with C.C. (23)
Rate (24) Cost (25)

Quantity on Order (26)
Last Balance (27)
Balance To Do (28)
Inspector's Signature (29)
Earned For Day Last Card Only (30)
Card No Circle Last No. (31)

Form 4. Direct-Labor Time Card

This form is used for recording direct, that is to say, productive work, whether it be done under the regular day-work, piece-work, premium or bonus system of wage payment; the forms used under each of these systems differing from the others in color only.



FORM 5. Indirect-Labor Time Card

HOLDEN MANUFACTURING CO. BOSTON, MASS.

BONUS OR PREMIUM REPORT PERIOD ENDING ______ Worker's No.

______ DEPARTMENT WORKER'S NAME ______ Date

BASIS OF PAYMENT IS 40 per hour .02 each over

Dept. No. | Worker's No. | Order No. | Oper. No. | Class | Type | Pieces Good | Cost | L C | Oper

Order No.	Oprn. No.	Pieces Made	Dftv.	Good	Bonus Earned	Signed O. K. By
		450		450	$1.00	

Class	Type

Description of Work

Operation

Date	Time	Pieces	Records of Performance						
12-1	4	180							
12-2	6	270							
	10	450							
			Bonus Earned on 50 pieces						

FORM 6. Bonus or Premium Report Card

another. These cases, they believe, can be handled in the following manner: Each worker gets a time card for each job he works on, and for each indirect labor task, reporting his time on separate time cards for each department in which he works. He has only one time-clock number, and hence it is impossible for him to receive duplicate pay.

By sorting time tickets to charges or charge accounts, and being sure that the labor charges agree with the pay-roll total by man number, the cases of workers loaned by one department to another, where a burden charge is involved, and where no burden charge is involved but only the labor cost, are satisfactorily taken care of. Furthermore, the detailed procedure for "loaned workers" described above is infrequently needed because most firms do not separate the pay-roll into departmental pay-roll accounts.

SHORT OPERATIONS.—The last special matter in accounting for labos deals with short operations. When operations are of short duration, it ir often impracticable to charge the direct labor involved to production order numbers through time cards, because many sizes may be handled together in one operation and each size may be on a separate order. Hence, these manufacturing operations are called "short operations," and code numbers are provided for them against which the labor involved is charged. Such accounting should be minimized as much as possible because it does not allow close cost analysis.

FINAL DISPOSITION OF TIME CARDS.—After time cards have been filled out, they are checked. They are then placed in numerical sequence and forwarded to the pay-roll department. There the next step is performed, namely, rating and extension of time cards. This work should be checked by someone who has not done the original work, so as to insure absolute accuracy. Now the cards are used in compiling pay-rolls.

Pay-Rolls

TIME CARDS.—Time cards are the originating records used in the preparation of pay-rolls, the objects of which are:

1. To calculate the wages of each worker.
2. To assist in labor control, and partially in burden and work in process control.
3. To determine the units of product made by each workman on direct operations.

The third object is not always accomplished by the pay-roll because the units of product made are shown on the cost sheets.

Time cards should reach the pay-roll department arranged according to the numerical sequence of the check numbers of workers.

PAY-ROLL SHEET.—The **basic record** in pay-roll work is the pay-roll sheet, a copy of which appears in Form 7.

Before the columns of the pay-roll sheets are filled out from time cards, the heading of the sheet should be written up, showing the department name, the name of the worker, his day rate and check number, and the dates of the pay-roll period. This saves time in preparing pay-rolls.

A brief explanation of the entries in the columns will be made.

The **slip numbers** are the numbers of the time cards of workers. The "charge" column shows the **order numbers** to be charged for the work done by employees. These order numbers may be either for direct (productive) work on production orders or indirect work on standing orders.

HOLDEN MANUFACTURING CO.
BOSTON, MASS.

PAY-ROLL SHEET

DEPT. ______________________ CHECK NO. ______________

NAME ______________________ RATE ______________________ PERIOD ______________

DATE	SLIP NO.	CHARGE	TRANSPER			DIRECT				INDIRECT				O. D. STANDING ORDERS				TOTAL		
			Hrs.	Min.	Amount	Hrs.	Min.	Amount	Pce Work	Hrs.	Min.	Amount	Pce Work	Hrs.	Min.	Amount	Pce Work	Hrs.	Min.	Amount

FORM 7. Pay-Roll Sheet

It is not absolutely necessary to have the "transfer" and "O. D. S. O." columns on the pay-roll sheet, but they are shown on the form simply to indicate that such information appears on pay-rolls sheets in some cases.

Day-work and piece-work wages are entered in the "amount" and "piece-work" subdivisions of the "direct" column, respectively. The same is true of the "indirect" column.

The "total" column shows the total earnings of each worker for each day.

At the end of the pay-roll period, all columns of the pay-roll sheet are footed vertically and cross-footed to agree with the sum of the total column. If the work checks, it indicates that it has been done accurately.

The next step is to enter at the bottom of the sheet the **premium** or **bonus earnings** of each worker in case they are not shown on a special sheet. These "deductions," such as stock subscriptions and Liberty bond payments in behalf of workers, are entered to get each worker's net pay for his pay envelope. Sometimes these deductions are entered in a special column provided for the purpose.

In some plants the sheets have spaces for this information:

Entered by—	Checked by
Extended by—	" "
Added by—	" "

Some sheets also have a space "Income tax posted"; and columns for the weekly rate and the hourly rate of earnings; and overtime hours and earnings.

Where a special method of wage payment is in use, workers should be informed as to the procedure in compiling pay-rolls. Otherwise they may feel that their wages are not being calculated correctly.

SPLITTING PAY-ROLLS.—One step in pay-roll accounting is known as "splitting pay-rolls." Many times when the pay-roll period is one week, the end of the month falls in the middle of the week. In such cases it is necessary to enter the cards of the last working day of the month and to rule footing lines after the entries of this day. Then the entries for the remaining days of the week are made. After all the entries are in for the last day of the week, another subfooting line is ruled in. The pay-roll sheets down to the first subfooting are now added; and then the balance of the days of the week down to the second subfooting—each section being added separately. In order to arrive at the total for the week, the two subfootings must be added.

The next pay-roll operation is to arrive at the total of the pay-roll for each department, by adding the total time and amount of wages for each block on the pay-roll sheet. These totals are determined for each pay-roll period and also for each month.

The pay-roll check is drawn for the total of the wages for the pay-roll period. This figure is charged to the Pay-Roll account and of course credited to cash. But unless the pay-roll period coincides with the cost period, there is in the balance sheet a liability, Accrued Pay-Roll, because pay-roll entries are made in advance of the payment of the last pay-roll.

DISPOSITION OF PAY-ROLL.—At the end of the month the Pay-Roll account is credited and the Work in Process account charged for the grand total of the direct labor shown on the pay-roll sheets, and the proper departmental burden accounts are charged for the indirect labor.

In the cost department, time cards for direct work are charged to production orders; and those for indirect work are filed in back of the standing orders and used in preparing the monthly departmental burden statements.

Standard Costs

TERMINOLOGY.—Much confusion arises on subjects of cost because of lack of standardized or uniform terminology. An example is the loose use of the words **standard** and **standardization.**

There are various phases of what might be called the standardization problem, such as standardization of product, machinery and equipment, operations, methods, cost, and terminology. Furthermore, even the terms, standard costs, average estimated cost, and budget cost, are not always used with precision. Standard costs may be defined as costs based upon normal production rather than on average production, due regard being had to both current conditions and what is known or anticipated with respect to the future. Normal production of an organization varies with the industry but is usually regarded as 80-85% of the practical capacity. Not only normal production, but also current and probable future conditions, should be considered in determining standard costs.

Average estimated costs, as the name implies, is the estimated cost for a future period based upon past averages.

Budget cost may be set for varying speeds of production—30-60-80-90%, etc., of maximum production. Alternative budgets for these different speeds of production are sometimes prepared. But budget cost may correspond to standard cost in case it is estimated that a forthcoming period will be a normal one.

SETTING OF STANDARDS.—The preparation and recording of standard costs will be briefly described.

MATERIAL STANDARDS.—Standard material costs are based upon the specification sheets, rates of past material consumption (regular and waste), contract prices, current market prices, past and prospective prices and costs. If a firm has inadequate past records for establishing material standard costs, it may put a given product through a test run to determine standard material consumption for both quantity and cost. However, a test run is often not satisfactory because it does not represent a fair standard performance.

Standard prices for materials bought are sometimes carried into the records. The procedure briefly is as follows: A sticker or distribution slip is attached to an invoice or an invoice stamp is used, the standard purchase price in addition to the actual price being inserted on the invoice. The stock record clerk, after receiving and entering on the stock records the receiving slip for the goods transported from the receiving department to the stores department, forwards it to the purchase department, where the sticker or distribution slip is filled out with the standard price of material purchased. If quantity on invoice and that received vary, the difference, if large, is adjusted with the vendor. If not large enough, it is shown as a loss or gain, as is also the difference between the actual price of material and standard price.

At end of month a summary is prepared showing losses or gains on each class of material bought.

Standard prices of material are adjusted when conditions warrant, in many cases only once a year. They are not used in connection with all material purchases, as in the case of some expense materials and supplies, and material purchased for a special order. In these instances actual cost is charged direct.

LABOR STANDARDS.—In determining labor standards, standard **rates of pay** are established for each department. being based upon the average

earnings of workers on a given class of work at the time the standards are set. If there is not sufficient experience upon which to base standards, **time studies** may be made. Such studies, however, are practical only in continuous process industries—not in a special order or jobbing business, where orders vary so widely. An order made one month may not be made again for several months. But in this case an estimated cost may be arrived at against which actual cost of the order is checked.

Some firms record both standard time and labor cost, and actual time and labor cost, on time cards or tickets. The total standard labor costs for each department are also calculated.

Some firms carry both the standard and actual labor cost into parallel columns in the Work in Process accounts by lines of product for comparison purposes, and the ratios between the standard and actual labor costs are calculated and shown in these accounts.

But in the case of **piece-work,** some contend that the rates are the labor cost standards, so that there is no necessity of placing the standard time on the time cards. In such cases, however, when examining the pay-roll it is often discovered that for various reasons day-work allowances to apprentices and to experienced workers have been made in setting labor standards. This matter may be handled by charging all of these allowances to burden, thus leaving in the labor accounts the exact amount of production times the piece rates. Others believe that any allowance made should show up as a variation from standard labor costs. However, no factory probably will ever run 100% on piece-work.

STANDARD BURDEN.—The calculation and application of predetermined departmental burden rates have been explained on page 608. In this section, attention will be devoted to three questions:

(a) Length of time to be considered in arriving at these burden rates as well as standard labor and material costs.

(b) Method of recording unearned or overearned burden, as the case may be.

(c) Frequency and method of writing off the difference between standard burden and actual burden.

(a) There are two points of view with respect to the first problem. One is to use the fiscal year in setting predetermined burden rates; the other is to use a cycle of years.

An excellent statement with respect to the latter practice is found in the uniform system of the Electrical Manufacturers' Council issued Oct. 1, 1922. The statement follows:

> The fiscal year is largely an arbitrary period and may not represent average conditions. Consequently, the attempt to absorb the indirect expenses in the costs of the fiscal period in which they are incurred may work injustice or entail loss. It is, therefore, sound accounting and good financial policy to recognize, in determining the cost of production, the principle of the continuity of time.
>
> To avoid violent cost fluctuations, normal or mean average rates based upon a cycle of years should be used in cost estimates and in costing production and shipments. It will take study and care to determine such rates and to keep them normal.
>
> It is recommended, therefore, that:
>
> (1) Normal or average rates (based on direct labor, direct labor hours, or machine rates) be established for separate departments or classes of product and used for cost estimates and in costing production and shipments.
>
> (2) A separate "Reserve for indirect manufacturing expenses" be set up for each department or class of product, created primarily from amounts over-liquidated, i.e., amounts charged costs of production in excess of actual indirect manufacturing ex-

penses, during periods of abnormal production, when the rates used in costing are higher than the actual. If the reserves established in this manner are insufficient, they may, if the Board of Directors approves, be supplemented by appropriations from surplus.

(3) Under-liquidations of indirect manufacturing expenses, during periods of subnormal production, in any department or class of product, be charged against its reserve.

(4) Constant study and comparisons of the production and expense factors be made by means of charts and statements, so that the established normal or average rates may be periodically corrected or revised as experience or conditions may require.

(5) Inventories at the close of the fiscal year should be valued, for balance sheet purposes, upon the basis of normal rates of overhead.

NOTE: When, a a policy of conservatism, an adjustment of inventory is made to the basis of curren overhead cost, in those years when current rates are lower than normal rates, this adjustment should be a temporary entry to be reversed at the beginning of the succeeding fiscal period, and this practice should be interpreted as the exercise of executive conservatism rather than cost accounting procedure.

This statement also bears on the third problem raised above.

(b) In booking the difference between standard and actual burden, two accounts may be set up for it, one called "Burden Variance" and the other, "Unearned and Overearned Burden." The former shows the difference between the estimated and the actual burden; the latter, the difference between the estimated burden and the burden applied at predetermined standard rates. Those who favor this method contend that there are **two distinct factors** in the difference between the standard and the actual burden; and that they are overlooked if only one account is kept to show the difference. However, others contend that keeping these two accounts for the difference complicates the bookkeeping, and that the difference can be analyzed well enough by simply setting up one account—the Unearned and Overearned Burden account.

Some of the reasons which cause the difference are: variation in labor rates and efficiency of labor, idle equipment, etc.

(c) The usual practice is to write off to Profit and Loss the differences between burden applied at standard rates and actual burden, at the end of the year instead of each month, because an underabsorption one month may be offset by an overabsorption the next month. Still, some cost men contend that the most scientific way of handling these differences is through a Reserve for Overhead account; the business cycle, rather than the fiscal year, being considered in setting up the reserve.

The Machinery Builders' Society which issued a uniform system—"Standard Accounting and Cost System"—in January, 1922, favors the practice of writing off the differences monthly or yearly. The following is a quotation from this system: "The **unapplied indirect factory expenses** created by subnormal production should be charged off each month against operations or at least at the end of each closing period. Conversely, if due to abnormal production, an excess amount of indirect factory expenses has been applied to cost, such amount should be credited to cost of operations."

The writer favors the yearly practice. It is not good policy to defer burden during a period of declining prices, because there may not be sufficient profits to wipe off the deferred charge and a concern is simply postponing a matter that might as well be faced earlier and disposed of, and should not rob future years of the income which properly belongs to such periods. Those who favor the "reserve method" as outlined state that it makes provision in advance for just such a contingency.

Statement of Variation.—Some concerns prepare a statement showing the

variations between actual burden and normal burden, arranged by departments and months. Such a statement contains the following information: normal burden basis (direct labor hours, or whatever it is); actual direct-labor hours; actual burden, in a total figure; burden rate; total burden applied at the burden rate; variation (loss or gain) between normal or actual burden; and the variation (loss or gain) between normal and actual burden to date.

FINAL DISPOSITION OF STANDARDS.—Standard costs may be posted to the cost sheets against which actual costs are checked.

In preparing the profit and loss statement some cost accountants show the standard cost of sales and below this item the various accounts representing the variations between actual and standard costs. The difference, therefore, between standard cost of sales and these "variation" accounts equals actual cost of sales.

ADVANTAGES OF STANDARD COSTS.—The following is a succinct statement of the outstanding advantages of standard costs:

(a) They are useful in setting selling prices.

(b) They are used in valuing inventories. For this purpose standard costs carefully established are apt to be better in the long run than actual costs of a given period.

(c) They are valuable in controlling and reducing costs, and promoting efficiency. Efficiency is a relative term. A manager cannot determine the efficiencies of men, machines, departments, etc., unless there are standards against which actual performances may be compared.

SERVICEABILITY OF STANDARD COSTS.—An interesting question is: To what extent are standard costs serviceable? Or, to put it in another way, Can standard costs be used to advantage in all of the types of cost systems discussed on pages 628 to 635?

In the **special order type** of cost system, standard costs are not worth much because each job is apt to vary so greatly in nature and cost. In this case, however, the cost of each order may be estimated and checked with the actual cost. It should be emphasized, however, that this estimated cost is not a standard cost.

In all other types of cost systems, however, standard costs are very useful. In some cases it is too expensive to record actual costs. Then standard costs should be used. In other instances, actual costs cannot be obtained, as in a joint product industry where products move along together up to a certain point. Actual costs are not so necessary in a **continuous process industry.** In some instances actual costs are not typical—then standard costs should be used.

Another question relating to standards frequently raised is: As a check on production, is not the establishment of standard units of time for labor and material sufficient, without extending this time into money, admitting the desirability of standard costs for inventory purposes? One point of view on this matter is that, if these standard unit times are arrived at, it does not require much additional work to calculate standard costs. Another point of view is that the most important thing is to determine these standard unit times and then if care is taken to see that production is going through in standard time, the costs will, to a great extent, take care of themselves automatically. Hence, no real need exists of carrying standard costs, with the exception of burden, into the Work in Process accounts.

Types of Cost Systems[3]

SYSTEMS CLASSIFIED.—One of the most important phases of cost accounting is to select and use the best type or types of cost systems suitable to each individual company. Too many cost accountants assume that the type of cost system which they have inherited or devised themselves is necessarily best fitted to existing conditions, which too frequently is not the case. By accepting the *status quo*, irreparable harm may be done in decreasing the usefulness of a cost system to the management. Seldom can one type be used advantageously in all departments of a given concern.

The best main classification of cost systems, the writer believes, is:

1. Special order
2. Product
3. Class
4. Operation
5. Process

The **chief features** of each of these types will be considered in turn.

SPECIAL-ORDER TYPE.—The special-order type of cost system gets its name from the fact that each customer's order, when translated into a production (or factory) order, is separately costed apart from all other orders; and because each order is more or less special. Each order calls for the manufacture of a certain number of units. This type of cost system is, without doubt, still the most common and hence the best known. But it is too prevalent and often is unsuitable, but fortunately is being widely supplanted.

Direct material and **direct labor** are charged directly against the order, and **burden** is applied to the order usually according to one of the three common methods of handling burden, viz., the direct-labor cost, direct-labor hours, or machine-hour rate. When the detailed costs of the order are assembled on the cost sheet for the order, the total cost is divided by the number of units, tons, yards, etc., to get unit cost of the order. The costs of orders are usually compiled too late to be of service in day-by-day control.

While an order is still in process it may be necessary, because of a rush demand by a customer, to make a partial shipment of the units completed on the order to the customer, but the entire cost of the order cannot be determined until all the order is completed. If this is the situation, however, care should be exercised to arrange quantities on orders so that the costs of the order can be calculated as soon as possible after its completion. Individual parts may be made in one set of quantities and sub- or minor assemblies are turned over for major or final assembly. But there is usually trouble in charging parts costs to assembly costs, even though care is taken to limit quantities on any orders. Assembly work usually begins before all the parts necessary for assembly are done.

Nevertheless, this condition may be handled in the following manner, which, however, is not entirely satisfactory:

The last previous cost or the standard cost of parts may be used in costing assemblies. However, in this case standard costs should be employed only in case there has been sufficient past experience upon which to base them. But this standard cost is not the usual ideal standard cost based upon normal production but rather one based upon the figures for the previous two or three months.

Delivery sheets or forwarding slips or sheets show completion of parts as they are forwarded into a parts stockroom. Parts are entered on stock rec-

[3] Some of the material under this heading was suggested by writings of Mr. A. F. Stock in Bulletin of Lybrand, Ross Bros. & Montgomery, N. Y.

ords as completed at the last previous cost or standard cost mentioned above. Under this method, parts are then requisitioned for assembly at the previous or standard cost figures. This procedure does not mean that the actual costs of the order are not assembled later. The actual costs become the basis for the "next previous" cost. When actual cost is entered on stock records, next average price can be adjusted to take care of difference between actual, and estimated or last previous cost.

The point was made above that under a special order system, **partial shipments** are often made. These must be accounted for on the profit and loss statement. The estimated cost of these shipments cannot be credited fairly to the actual cost in the Work in Process accounts or to Finished Stock accounts. Consequently, an offsetting account, "Estimated Cost," is opened. This account is credited and cost of sales is debited with the estimated costs of the partial shipments, which, as the name implies, is an estimated cost based on previous cost or standard cost.

The **cost sheet** for the order has a space for noting whichever one of these costs is used.

Later, the Work in Process account is credited with total actual cost of the order, the estimated cost account being charged with a sufficient amount to wipe it out and the balance is debited or credited, as the case may be, to cost of sales.

The special-order system should be used only in industries where material, labor, etc., vary considerably. It is used chiefly in jobbing shops. Because orders are costed late and because each order may be different than every other, the shop management can make no intelligent use of order costs. But the shop management may get some value out of costs of orders if they are shown on a sheet analyzed by classes of products, by major operations, and given per unit, ton, piece, etc.

In determining the cost of an order it is not sufficient to get the material and labor costs in total. Material costs of parts and labor costs by operations should be shown on the individual parts cost sheets; and of course the total costs of parts are carried over to the assembly cost sheet.

Samples of cost sheets appear in Forms 8, 9.

PRODUCT TYPE.—The product type of cost system is applicable where a company is making a standard catalog line of goods, manufacturing the same product over and over again. In this case order numbers are disregarded and costs are charged against product or part numbers, for the reason that it is impractical to try to separate lots of orders going through a plant of the character just mentioned. Furthermore, quantities vary considerably as between operations. Work is scheduled by referring to a definite quantity of a part number to be made on certain operations. Then, too, there is no **physical check-up** between one operation and another with respect to the quantity finished on any particular order number. The costing is simplified if there is little or no defective work or spoilage. Time cards are filed against the product or part number by major operations; quantities made, of course, being noted.

Labor and **burden** are divided by total quantity made on an operation for the period, in order to determine an operation unit cost. Because quantities vary as between operations, in order to get the total cost of a part for a period, the individual operation unit costs must be added. Where there is no spoilage, the final quantity completed can be multiplied by the total of the individual operation unit costs and the Work in Process account credited accordingly.

HOLDEN MANUFACTURING CO.

BOSTON, MASS.

COST SHEET

NAME OF ARTICLE ______________________ ORDER NO. __________

DESCRIPTION ______________________ PART NO. __________

______________________ UNIT ______________ SIZE __________

ACCOUNT QTY. COMPLETED CLASS

DEPT.	MACH NO.	OPERATION	QTY.	DIRECT LABOR HOURS	DIRECT LABOR AMOUNT	MACH. HRS.	BURDEN				TOTAL BURDEN AMOUNT	TOTAL LABOR BURDEN	COST PER UNIT
							REGULAR		MACH RATE				
							RATE	AMOUNT	RATE	AMOUNT			
TOTAL LABOR & BURDEN													

MATERIAL COST

PART NO.	SPEC	DESCRIPTION	QTY.	PRICE	AMOUNT	COST PER UNIT

ORDER HISTORY			REMARKS			
	DATE	QTY.		TOTAL MATERIAL		
ORDERED				TOTAL PLANT COST		
STARTED				ADMIN. & SELLING %		
COMPLETED						
COMPILED	BY			TOTAL COST		

FORM 8. Individual Part Cost Sheet

HOLDEN MANUFACTURING CO.

BOSTON, MASS.

ASSEMBLY COST SHEET

NO. 1

NAME OF ARTICLE	ORDER NO.
ADDITIONAL DESCRIPTION	CLASS
	TYPE
MADE IN DIV. NO.	SIZE

PART NO.	NAME AND DESCRIPTION OF PART	TOTAL PIECES	COST EACH $ C.	TOTAL COST

LABOR

OPERATION	HOURS	AMOUNT	OPERATION	HOURS	AMOUNT
1			BRO'T FOR'D		
2			6		
3			7		
4			8		
5			9		
FOR'D			TOTAL ASSEMBLY LABOR		

ORDER HISTORY			SUMMARY	
	DATE	QUANTITY	TOTAL LABOR AND MATERIAL	
ORDERED			BURDEN HOURS AT PER HOUR	
STARTED			TOTAL PLANT COST	
COMPLETED			COST EACH	
COMPILED		BY	ADMINISTRATIVE AND SELLING %	
			SELLING PRICE $ TOTAL COST	

FORM 9. Assembly Cost Sheet

Where a large amount of **spoilage** occurs, the cost methods used under the product type are somewhat complicated. The procedures to be described are used only when quantities made are large. A separate cost sheet is prepared for each product or part number; also for minor assemblies; and for major assemblies. Labor and burden are charged by operations, and the total of these two major costs divided by the quantity made shows total labor and burden cost of each unit of product completed. The cost thus far includes that of both bad and good pieces. Opposite each operation cost is shown the quantity defective at each operation. Multiplying this figure by the total cumulative unit cost up to this point gives total labor and burden loss of defective pieces. The figures in the columns on the cost sheet are added. If all pieces were good, the work in process could be properly cleared, but because of defective work, a certain figure must be added to this total cost to provide for a loss which otherwise would never be credited to work in process.

Divide the total loss of defective pieces, which includes labor and burden, by the final quantity of good pieces made at the end of the last operation which gives loss per good unit. Adding this loss to the previous cumulative cost of each unit, gives total labor and burden cost per unit. Then adding material cost per unit good, gives total factory cost.

Some of the **advantages** of these methods are: Actual costs of each operation for quantities completed are secured regardless of order numbers or lot numbers. This is quite serviceable to factory managers, rate-setters, time-study men, etc. The inspection department, of course, reports defectives on each operation.

It is not necessary to wait for costing of orders before any credit can be made to work in process, but actual costs for the previous period can be posted to stock records and used as against whatever parts were made during the month.

In many companies, the same results as described might be secured through proper production planning and control and issuance of shop orders for large lots, representing several hundred actual or anticipated customers' orders. But production orders are frequently not handled in this manner, and hence use of product costs is simpler and safer.

If spoilage is negligible, simply divide costs by production to get the unit costs. If no inspection department exists, and no standard waste percentages have been set, an easy way to get spoilage out of Work in Process accounts is to have each department physically segregate its scrap and turn in periodical reports showing parts scrapped and their stage of completion. The cost can be credited to Work in Process and charged to the Scrap account, which becomes a part of general factory expense. Sales of scrap are credited to Scrap account and the balance is a loss which goes into Profit and Loss account

CLASS TYPE.—The class cost system possesses utility where products are made in small job lots in great variety. Under this system articles are grouped into classes and costs are calculated for each class on some suitable unit basis, such as pounds, cubic feet, etc. In some instances, costs may be analyzed further for the articles in the class, while in other cases such analysis is not only impracticable but impossible.

This type of system has been found serviceable in small jobbing foundries manufacturing a large number of orders monthly. In such a plant some patterns are used very infrequently. In one case 90% of the orders were for five castings or less per pattern. Formerly, this concern had a special-order system. The detailed work in costing each order separately was great.

Furthermore, the sales department was constantly confronted with this question whenever a customer came in with a new pattern: "Which one of our past orders is similar to the new one?" Usually, no such order was found. Consequently, cost of each new order had to be estimated and it was often more or less worthless because of the frequency of requests for estimates. In a jobbing foundry where few castings are made on an order, it is almost impossible to ever get two costs alike. The concern in question needed a system which would show average cost per pound of certain classes of castings. Such a system was installed. The product was divided into some 16 main classes by weight and into 3 subclasses; no cores, simple cores, and difficult cores—making some 48 classes in all. The installation of a class cost system would not have been necessary if the company had made hundreds of castings from the same order, and if the jobs had lasted for some time. Castings of over 2,000 pounds, however, were still costed on a special-order basis.

After the new system was put in, when a new order was received, it was determined into which class it belonged; then past costs of that class were very useful in estimating the cost of the new order and in establishing a selling price. Furthermore, the class costs enabled the management to decide on the profitable classes to make and sell.

Class costs may be satisfactorily used also in the plating department; the cost basis being either units produced, square inches plated, or pounds plated.

One feature which sometimes can be used in conjunction with the class cost system is the **factor-unit basis.** This basis is established for the different sizes of product, and product is classified according to the complexity or difficulty in handling each class. For example, it is said that this product is twice as difficult to make as this one and so on.

Under the class cost system, **time tickets** may be turned in for both order numbers and class numbers. If class costs show any large variations, order costs can be compiled and analyzed to discover causes of variations within a given class.

OPERATION TYPE.—Under this type, direct labor, or labor and burden are combined and divided by a common unit of production for one particular operation, or a group of operations.

This type is common but could be used more frequently. It should not be confused, however, with keeping of operation costs in connection with special-order cost, where operation costs are simply a further analysis of order costs.

In the operation system there are no order or shop numbers so far as costs are concerned. All labor is charged directly to an operation because the product is usually mixed up as to orders.

The operation cost, for example, may be used in a rubber tire factory. Of course, in making or building tires, each size is costed by itself, but other operations are costed on an operation basis; e.g., the mixing of various compounds is done on the cost basis of the number of pounds mixed; the fabrics and rubber going through the calender are divided by the number of linear yards calendered; the curing cost per tire cured is determined; etc. There may be two groups of **operation costs:** (1) for cord tires, and (2) for fabric tires. **Other operations,** such as trimming the tread and bead rinds, are costed on a unit tire basis. It is necessary in an operation system to have good production records, so production at end of each operation may be known. The costs per unit of operations in manufacturing a tire are shown separately and added up to get total cost.

Material costs are obtained from specifications. A practical assumption made is that all tires finished in one month were made at that month's

HOLDEN MANUFACTURING CO.
BOSTON, MASS

PRODUCTION & COST RECORD

TUBES Month..............................

Description ....

Date	Total Production	OPERATION No.	OPERATION Name	Total Labor Cost		Cost Per 100 Tubes	
		1100	Making				
		1101	Covering Air Bags				
		1102	Wrapping				
		1103	Curing				
		1104	Tagging				
		1105	Buffing				
		1106	Joining				
		1107	Inserting Valves				
		1108	Cementing				
		1109	Splicing				
		1110	Taking Down				
		1111	Assembling Valves				
		1112	Inspecting				
		1113	Testing				
		1114	Deflating Tubes				
		1115	Deflating Air Bags				
		1116	Tightening Nuts				
		1117	Boxing				
			TOTAL				
			Burden @ %				
			Total Labor and Burden Cost				
		Material Cost					
TOTAL			Lbs. @ Per Lb				
		Credit					
			Lbs Rubber Scrap @ Per Lb				
			Net Material Cost				
			Total Plant Cost				

FORM 10. Production and Cost Record

operation costs. This is not always true because of the lap-over of a few days between months, but the law of averages should work out. The quantity of each size made multiplied by total cost per tire gives the figure for crediting work in process and charging finished stock. The tire cost, which is built up as a summary of operation unit costs, is sometimes called **synthetic cost.**

After an operation cost system has been operated for a while, **standard costs** may be established and credited to work in process. Standards need be changed only periodically, perhaps every 3 months.

Defective work becomes part of burden and is credited to work in process. If this is impossible, standard waste percentages for each operation may be used.

The operation system, therefore, is used where specific orders lose their identity and where it is practical to keep costs for certain operations by common units.

A **production and cost record** serviceable in connection with an operation cost system appears in Form 10.

PROCESS TYPE.—The process system is used where all three elements of cost can be divided by some common unit of measurement, pound, foot, piece, etc. Under the process type of cost system we do not simply get a process cost per pound or gallon, etc., but we have an analysis of cost by major operations, material cost per basic unit, etc. Under this type one should watch changes in work in process, and consider the beginning and ending inventory in getting current month's cost.

Chemical plants often use the process type of system to advantage. In some chemical plants, all departments are costed on process basis, which does not usually hold in other lines of business.

Foundries use the process cost up to the pouring of metal in molds. The galvanizing department may use the process type.

Plating departments rarely are on a process basis, but where all products are nearly enough alike so that they consume about the same amount of material, labor, and burden per certain unit, such as square inches, the process system can be used advantageously.

Other industries using the process system are: Coal mining, ice, stone quarries, and paper concerns which make one type of product, such as heavy wrapping paper, and others.

Advantages of Cost Accounting

BASIS OF MANAGEMENT.—Probably the greatest advantage of a cost system is that it makes for more effective control and co-ordination of a business than any other mechanism of management. Cost accounting is not an end in itself. It is a diagnosis of business ills, not a cure for them. The management should supply the cure after proper diagnosis.

By setting up standards of performance and standard and budget costs for men, machines, and materials, and comparing actual performances and costs with these standards, a definite conception of the efficiency of the factors in production, distribution, and administration is secured. Remedial measures can then be instituted to eliminate or reduce waste and to control and co-ordinate the business more effectively. **Control** and **co-ordination** are words used more and more by cost men and managers. They are as vital in management as the words "debit" and "credit" in accounting.

Equipped with cost data, managers are in position to formulate business

policies with intelligence and with assurance which comes from the possession of experience data. With these facts budgets can be prepared; labor troubles can be more intelligently discussed with greater probability of an equitable settlement for all parties concerned; wastes of various kinds can be eliminated or reduced; and business conditions can be forecast better; etc.

After business policies are formulated on the basis of facts, there is greater probability that the policies will be carried out, because cost systems provide information with which to realize the day-by-day control of the business.

COST MANAGEMENT.—Cost systems foster the increasing use of scientific method, so called, in business pursuits. Industry is rapidly adopting a new type of management—**cost management.** This is management based upon facts—the facts resulting from use of a cost system. In industry several **types of management** have emerged: the military, Taylor or functional, Emerson or staff, committee, departmental, and divisional. Advocates of these types have not laid as much stress on the absolute necessity of adequate industrial facts, as have those who believe that cost management is growing.

Only by use of cost records can the multiple activities of modern business conducted under the factory system—which has supplanted earlier systems of industry, such as the family, handicraft, and domestic—be thoroughly visualized and proper policies formulated and carried out. Formerly the need for cost systems was not so imperative, because owners, who were also managers, were intimately in touch with details. This condition is not now common. Modern managers, directing the policy and operation of large businesses, must rely on records in visualizing the conduct of the business, so as to exercise intelligent control.

UNIT COSTS.—These records must be planned to show accurate **unit costs,** which, however, are not 100% accurate, because it is impossible to measure with exactness the incidence of certain burden items. Total costs alone do not satisfy managers; neither do average costs in many instances.

By keeping unit costs, profitable and non-profitable lines are clearly recognized. Thus the management can choose the kind of goods to push. Unprofitable lines need not always be abandoned. They may be continued:

1. For sake of their advertising value.
2. For purpose of completing a line.
3. For maintaining production in slack seasons because of organization and equipment which are expensive, due to fact that part of overhead is fixed and continues despite of changes in production volume.

Overhead formerly charged to a product no longer made must be borne by the products still being manufactured. If production of remaining units is increased sufficiently, thus taking up the "slack," higher unit costs do not result. The main effort is to increase sales of the paying product.

DETERMINING SELLING PRICES.—The advantage of cost systems as aids in establishing selling prices has been overemphasized. It holds true when a concern works on a **cost-plus contract,** when it has a **monopoly,** and when its product is highly specialized, as in case of a number of jobbing industries, and so considerably different from products of other concerns. But even industries manufacturing standard competitive lines of products must have definite bases for determining original selling prices of these products. Some selling prices are established by "charging what the traffic will bear"; but usually they are set by competition. Selling prices frequently determine costs. Thus in **packing concerns** and **chemical plants,** costs of

major, joint, and by-products are distributed in many cases over these products according to respective sales (market) prices of these products.

Instead of saying that one function of a cost system is to enable a concern to establish intelligent selling prices, it is better to say that it aids in establishing the **lower limit,** below which there is no profit on sales, called the **point of profit** or **stop-loss point.**

Too frequently, in determining selling prices, volume is disregarded by managers who do not consider that there are certain fixed expenses which do not fluctuate, whether volume is great or small; consequently, the higher the volume of sales is above this line of fixed expenses, the greater the chances are for making money.

The basic theory that might be advanced, then, is that the manufacturer should try to obtain, at least, such a volume of business as would pay the fixed expense of operating his plant, and also the variable expense which rises in proportion to the volume of production. Expressed in other words, each concern has what is known as its "point of profit" or the sales volume needed to operate without loss and from which profits commence to accrue.

It has been conceded by some authorities that a manufacturer should make the major part of his profits on the "effort of manufacture." The more effort one particular product requires over another, the more profit that particular article should bring. The whole theory of manufacture is to purchase material and then apply labor and the expense of co-ordinating labor and material (which is burden), in such a manner as to bring about a profit. This theory means effort. The manufacturer who adopts this theory does not consider so much the buying and selling of the raw materials as he does the effort put on the materials.[4]

NORMAL PRODUCTION.—Many firms vary production with changes in sales conditions by increasing production as sales increase, and vice versa. In periods of depression, equipment and labor may be idle, with the result that unit costs increase. In many cases it is better to cut selling prices slightly rather than to "hold the market," because the plant could then run more normally, and turn out product that could absorb "fixed" overhead, which otherwise would be dead loss. Production, therefore, should be as normal as possible. It is helped by standardized equipment, which depends on close correlation between operating departments, so that all may operate as uniformly as possible. Normal production is also helped by standardization of labor, which materially decreases labor turnover. **Scientific management** aims to bring about a **standardization of labor** approximating in degree the standardization of equipment accomplished largely through the interchangeability of parts for machines.

OTHER ADVANTAGES.—Other departments than sales—particularly production and financial—are helped by a cost system. With a system of

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[4] See Official Publication, Vol. IV, No. 9, of the National Association of Cost Accountants, "Prices, Profits and Production," by A. F. Stock and M. B. Gordon. This article contains a "point of profit" chart bringing out the application of the ideas explained in the foregoing quotations. The same kind of chart appears in an article, "Finding the 'Stop Loss Price Point,'" by H. R. Boston, published in *Industrial Management*, Nov. 1921.

A method of "profit addition" somewhat similar to the "effort of manufacture" basis referred to above is explained in the uniform cost system adopted jointly by the Label Manufacturers' National Association, the Folding Box Manufacturers' National Association and the National Association of Employing Lithographers. This method is "based on the difference between the manufacturing effort turnover and the material turnover, a certain percentage being added to the manufacturing effort value and a variable per cent being added to the material value, depending upon the rate of material turnover."

cost records and also a system of production control, costs may be reduced, which is important today, owing to keenness of competition. It can be determined with the use of cost records whether it is more economical to make or buy certain goods, and which methods of manufacture are more economical.

If **budget costs** and **standard costs** are calculated, a firm can work out an intelligent financial plan, knowing what expenditures will have to be made and the possible receipts to be expected from various sources. Fixed capital and working capital needs can be determined, and steps taken to procure necessary funds needed to operate the business successfully, without tying up too much capital in inventories.

Another advantage of a cost system is that it enables monthly financial statements to be prepared because perpetual inventories (stock records) for raw materials, supplies, work in process, and finished goods are kept. If stock records were not maintained, it would be necessary to take a physical inventory before the statements could be drawn up.

With accurate profit and loss statements it is possible to make comparisons for different periods of costs and profits on the whole business and the subdivisions thereof, such as operating, selling, and administrative departments, and for processes, jobs, and lines of product, etc. Furthermore, with detailed cost data a basis is provided for comparison of total cost and the various elements of cost with past costs of similar units, with estimated or predetermined costs of the same unit, and subsequently with cost of similar units. To make cost data valuable for comparisons as between different periods, it is often necessary to keep the details in terms of units of material and labor as well as in monetary terms. By comparing balance sheets as well as profit and loss statements, changes in assets, liabilities, and capital can be ascertained.

Workers benefit directly and indirectly from better cost methods. Costs are reduced and wages either remain the same or are increased. By keeping performance records of workers, promotions in rank, wages, and salaries may be made on a fairer basis than if such records do not exist. If costs are reduced, selling prices can be reduced, which means that workers can buy more with their dollars. **Employers** are benefited through cost reduction. They are able to visualize the conduct of a business through cost records. They must have these because they cannot keep in touch personally with conditions as formerly when contact between employer and workers was more intimate.

The public pays for excessive costs which result from unnecessary waste in operations and from labor troubles. Many of these industrial ills are ameliorated, if not eliminated, if costs are better recorded and made public.[5]

Cost Reports and Managerial Uses of Costs

EXPENSE AND BURDEN STATEMENTS.—The final steps in cost accounting are the preparation of cost reports and financial statements, such as expense and burden statements, cost sheets, cost of sales analysis, monthly report of sales, inventory statements, balance sheets, and profit and loss statements. The two financial statements will not be discussed in this section.

One of the most important sets of cost reports are expense and burden statements, in which indirect costs are entered.

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[5] See publication of the National Association of Cost Accountants, "Radio Educational Campaign," for material on "What Cost Accounting Means to Industry," "Advantages of Cost Accounting to Workers, Employers and the Public," prepared by J. P. Jordan.

Indirect costs are of two classes:

1. Expenses, which after collection are distributed to other expense accounts or to burden accounts. Some examples of these expenses, for which statements are drawn up, are steam, compressed air, power, trucking, and cost department expense.
2. Burdens, which are the final collection of all indirect costs of each direct or productive department. Burden statements show the detailed burden and, of course, burden appears on cost sheets likewise.

Before expense and burden statements can be prepared, a **code of standing orders** must be prepared which can be done intelligently only after the concern has been departmentalized. These are often gotten up in booklet form.

A **controlling account** for each expense and burden account must be opened in the general ledger. Debits to these controls are made from journal entries. All expense accounts are cleared monthly into the burden (debit) accounts. The **burden control accounts** should never be credited during the year except for correction, the credits for burden applied at predetermined or standard rates being made to a parallel **"Burden Credit" account.** These parallel accounts are opened in order to allow the burden accounts, both debit and credit, to accumulate, thereby giving a control for burden statement purposes which otherwise would be impossible. (See also discussion of burden or overhead in this section.)

In general, all expense and burden statements include **three main features:**

1. A section showing details of all charges to the account.
2. A section showing disposition of the cost:
   (a) In the case of expense accounts, this is a complete distribution to other expense accounts and to burden accounts.
   (b) In the case of burdens, this is the amount applied to costs at standard rates.
3. A section showing comparative unit and average costs.

A sample form of expense statement appears in Form 11. A sample form of burden statement may be found on page 615.

FOREMEN AND COST DATA.—Practically every progressive manager and cost man believes that department heads and foremen should be furnished with certain cost data, but considerable difference of opinion exists as to how much cost data they should get. A great amount of educational work in cost methods among foremen remains to be done, however, before they will extract the most out of cost figures submitted to them.

When foremen receive cost figures, they are likely to regard themselves as managers in the true sense of the word, and consequently will manage better than if no cost data were furnished them.

The point has been advanced that the tendency to take away some of the duties which foremen formerly had under the military type of management has possibly been carried to an extreme; and that foremen ought to have much to say about the planning of work and the control of production in their departments. Prior to the days of F. W. Taylor, the pioneer in scientific management, the foreman had too many duties and was "Jack of all trades and master of none." Taylor, his followers, and other industrial engineers have advocated a rather distinct separation of planning and performance, and the carrying out of this separation has resulted in the foreman being relieved of many of his former duties. Today, some feel that this development has been carried too far.

It may, nevertheless, be reiterated that foremen should get certain cost

Holden Manufacturing Company
Trucking Expense, June, 19—

	Jan. 1 to June 30, 19—	Month June, 19—	Month of May, 19—
Trucking Expense:			
G-101 Electric Truck Labor	$ 2,090.54	$ 323.36	$ 365.90
102 Maint. of or Supplies for Electric Trucks	3,010.50	123.94	503.34
103 Gasoline Truck Labor	1,477.24	136.49	285.64
104 Maint. of or Supplies for Gasoline Trucks	2,052.27	548.31	468.37
105 Teaming	1,497.19	243.66	260.22
106 Miscellaneous	62.63	.40	3.07
	$10,190.37	$1,376.16	$1,886.54
Apportioned Charges:			
Depreciation	$ 513.00	$ 85.50	$ 85.50
Electric Power	333.06	47.64	43.96
Liability Insurance	86.01	11.08	15.70
	$ 932.07	$ 144.22	$ 145.16
Total Expense	$11,122.44	$1,520.38	$2,031.70

Distribution for Month

Dept. 1	55.24%	$ 839.86
2	29.81	453.22
3	2.50	38.01
4	5.60	85.14
5		
6	2.59	39.38
7	3.88	58.99
8	.38	5.78
		$1,520.38

Form 11. Expense Statement

data. But it must be properly assembled and of such a nature that they can readily interpret and use it. Order cost sheets are of little or no value to foremen because they get them too late to control costs. Furthermore, even if foremen get them promptly, they are usually too many to analyze.

Then again, the man in the shop likes to refer to production in total or to measure it with some sort of standard and not by different order numbers, even though there may be specific orders for different customers.

But order costs are of value to foremen if they are grouped by classes of product, by major operations, and by units of product, such as foot, piece, etc.

Most concerns do not give foremen direct costs, but many supply them with burden statements. There seems, however, to be no adequate reason why foremen should not get direct costs, since they are in a position to reduce not only these costs but also indirect costs.

Most of the trouble with special order cost systems occurs in getting foremen to use direct costs because there is no common unit which applies to all

orders. This is particularly true in all jobbing industries which often have poor standards, if indeed they have any standards at all. But even in these industries the cost of the order and the production per hour expected are estimated. Any deviations from these estimates can be observed while work is in process. These estimates are not standards but serve as quasi-standards.

In other industries where good standards exist, the foremen should watch the actual performances and compare them with standards, daily if possible, and if not so often, then weekly or monthly.

Some concerns take the attitude that if foremen get cost figures, the figures will leak out to someone outside the plant. Even if they do, they are not of much use to other firms, many conditions in which differ from those in the plant where the figures were compiled.

DEPARTMENTAL BURDEN STATEMENTS.—Each head of a direct or productive department should get each month a copy of the burden statement for his department. (See p. 615 for a copy of such a statement.)

The burden statements which foremen get should show the itemized burden, the **total burden,** including all apportioned or proportioned charges, such as light, heat, and power, trucking, depreciation, general expense, etc. Some cost accountants show the total burden which foremen can control, as a separate figure from the apportioned expenses, which some say are uncontrollable. Others take the position that practically all burden can be controlled to a certain extent. Foremen should be told why and on what basis the apportioned expenses are charged to their departments.

Each foreman should also get a statement showing him the comparison of his monthly burdens for 6 months. Such a statement has the following columnar arrangement: standing order numbers; name of account; average burden for previous 6 months; the amount of the current burden for the month for each standing order; the per cent which this burden bears to the burden basis, whether direct-labor hours, machine hours, or direct-labor cost; and the average per cent from the beginning of the 6 months' period for each item. Percentages which are higher than the figure for the same item for the previous month are entered in red; the other percentages in black. It is the percentages on this report which are significant since the burden may increase and still indicate a satisfactory condition because of the increased volume of business done. Many economies may be effected by a close study of monthly burden statements and comparative burden statements.

WATCHING DIRECT COST.—The number of direct-labor hours, the number of indirect-labor hours, the amount of burden, the ratio of burden to the burden basis, whether direct-labor hours, direct-labor cost, or machine hours, are statistical data always of interest to the management.

Keeping track of the direct cost is different from keeping track of the indirect cost. To determine how the direct cost is best watched, depends very largely on whether or not the manufacturing plant is running under a method of production control.

When a method of production control is followed and the various direct operations are carefully scheduled at standard rates, the natural way of controlling the direct operations is to keep in constant touch with performances as shown by the control methods. Each operation on each piece, whatever the line of industry, should be subject to some **approved standard of speed**—a certain number of pieces per hour or per day, as may be best.

With this method it is necessary—and fair enough—to wait until an order is completed before knowing exactly how that order is running in comparison to the speed estimated for it, on the basis of past experience. The superin-

tendents and foremen should, however, be given the advantage of seeing the actual cost sheets on each completed order, so that they may note exactly how successful their department has been in producing the work assigned. Even without being able to watch the progress of the work as it goes on, there is a psychological effect produced by looking at the completed cost sheet, whereon the final result is shown as a result of the actual circumstances which prevailed during the run.

In any business doing a large amount of rapid work, the **detailed cost of each run** should be entered on a comparative cost sheet. This comparison will show, side by side, the unit time and cost for each operation, and for each period where this particular unit has been in use. Fluctuations in direct cost are the net result of different workers who may run the same machine or perform the same operation. A very careful study should be made of the resulting cost as shown on the comparative sheet. Many times this comparison will bring out possibilities of eliminating the more serious fluctuations—and perhaps reducing time and cost—through careful examination and revision of operating methods.

LABOR COST INFORMATION.—Not only should foremen get burden statements, but statistics showing the amount of the direct-labor pay-roll and the amount of the indirect-labor pay-roll should likewise be placed in their hands.

Comparative labor costs on special orders are not of much value unless grouped by classes of product. When so grouped, the management can ascertain whether they are out of line with past and expected performances.

Other labor cost information of great value to the management is: monthly reports of direct- and indirect-labor costs by departments; the cost of indirect labor in each office department; relationship of indirect labor to total burden; the average rate per hour for indirect labor; the average rate per hour for direct labor; and the percentage of the total burden to the drect-labor cost.

Labor cost information is not only serviceable in normal times but also in periods of business depression. In the latter case, owing to the usual practice to discharge some of the direct workers, the ratio of the indirect labor to the direct labor rises. By having labor cost data, an intelligent reduction in the number of indirect as well as direct workers can be effected by comparing workers' actual performances with standard performances, and by studying over a considerable period the records of their production and their conduct generally. Workers' excuses to do work within the allowed or standard time are noted on their records and their future performances are studied in the light of their excuses. These excuses may reveal conditions, such as machines or fixtures out of order, which otherwise would never be discovered. Workers not reaching the standards consistently are given three warnings in some plants before they are discharged. Workers whose records indicate high efficiency are shifted to other jobs and tried out in many ways with a view of promoting them to foremanships. Performance records of workers are also studied to decide whether a man's request for an increase in wages is justified.

If labor statistics are properly used, the practice of penalizing jobs by charging as indirect labor, excessive direct time consumed on jobs will be checked.

In the case of the lost time of workers, the foreman must explain to the proper official the necessity of reporting lost time. Such procedure prevents the compilation of erroneous cost information and exaggerated labor costs against any particular job. It is also of material assistance in checking the effectiveness of schedules as prepared by the scheduling department.

MATERIAL COSTS.—Foremen should also get direct-material costs. While they cannot control **material prices,** they do have a large part in controlling the **use of material.** Excessive uses of material are detected by comparing consumption with material specifications or bills of material which show standards.

Among the most frequent reasons for diverging from the standard cost of material are:

1. Inability to secure the standard material.
2. Increase in cost of the standard material.
3. Large spoilage of material.
4. Waste on account of using wrong size of material.

It often occurs in making some product that too expensive material of a given size is used. This may be the fault of the operating department which has chosen the wrong material, or it may be the fault of general business conditions, which make it impossible to obtain the right kind of material. In either event, the foreman should know exactly what has happened, so that in the future he can choose more wisely, if the fault is his own, or can see that the purchasing department supplies him with the proper kind of material.

As for all the other faults—spoiling, etc.—it is entirely the duty of the foreman to eliminate to the greatest possible extent such causes as tend to increase the cost of the product in his department. It should be evident, however, that no foreman can properly or intelligently act in the best manner unless he is thoroughly posted in respect to what is taking place. For this reason, superintendents and foremen should be given constant access to the cost records in order that they may be fully posted concerning all that happens.

COST SHEETS.—The summarizing records for the total cost of the product made are the cost sheets. (See pp. 630, 631 for sample cost sheets.) Direct material, direct labor, and burden are entered on these sheets; sometimes, also, the **selling and administrative expenses,** which, when added to the factory cost, give total cost; and sometimes the **profit** on the product, thus arriving at the selling price of the product. Total cost divided by units of product made gives the unit cost, which is more significant to the management than total costs.

The value of cost sheets to the management, however, has been greatly overexaggerated. As stated before in this section, order costs are of little value because they are received too late to control costs, but are of some value if grouped by classes of product, by major operations, and by units of product.

COST OF SALES ANALYSIS.—Another valuable report for executives is the "cost of sales analysis" prepared monthly. This shows the monthly cost of goods shipped and billed. In order that this analysis may be prepared, a duplicate of every invoice is forwarded to the cost department. The analysis should be kept according to classes of product. It is possible, then, to determine the average percentage of profit by classes of goods, which is of great value to executives. Standard costs are often shown in this report and compared with the actual.

A real difficulty arises in preparing this record where **partial shipments** have been made on orders.

This situation may be handled in three ways:

First.—Separate costs can be worked out for each operation as far as it has been performed and so an actual cost on the partial shipment can be built up. This is accurate but impracticable because of the detail involved.

Second.—The billing price can be taken as the cost. This means that no profit will be shown in the Profit and Loss account until final shipment is made, when the entire profit on the job will develop. This is the conservative method, but many companies do not wish to postpone the profit showing so long.

Third.—The estimated cost can be taken as the actual cost, possibly adding 3% or 5% as a factor of safety. This would mean, then, that the estimated profit, less any percentage as a factor of safety, would be shown on the partial shipment.

When the job is actually completed an adjustment will be made on subsequent bills to cover any difference between the actual and estimated costs on the partial shipments. If the estimated procedure is on an accurate basis, this method works out very satisfactorily.[6]

See also discussion of types of cost systems (p. 628) for further material on the costing of partial shipments.

COST OF GOODS RETURNED.—Some concerns also prepare monthly a statement of the cost of goods returned.

MONTHLY REPORT OF SALES.—If the cost of sales analysis shows only costs and not sales prices, a monthly report of sales should be prepared. A serviceable form of this report follows: Item, this month; estimated this month; per cent increase or decrease, last month; per cent increase or decrease, to date this year; estimated to date this year; per cent increase or decrease, to date last year; per cent increase or decrease.

It will be noted that this form provides for estimated or budget figures as well as actual. The management by studying this record can effect a better control of sales than if without the record.

INVENTORY STATEMENT.—Foremen should also be kept informed as to the status of inventories as reflected on the balance sheet. An inventory statement may be prepared monthly which shows the control accounts for the inventory: raw materials, supplies, work in process, and finished goods; figures for the current month, the last month, the year to date, and the corresponding month last year being entered on the statement. These inventories are scrutinized by the management to see if the values stated are too high or too low. If the manager wants more information, he can refer to the stock cards which contain the details which appear in total in the inventory control accounts.

A **form of inventory statement** which can be used where a concern has a system of budgetary control is as follows: Item, inventory, estimated inventory, per cent increase or decrease, shipments, estimated shipments, per cent increase or decrease, turnover this quarter, turnover same quarter last year.

ADDITIONS TO PLANT CONTROL ACCOUNTS.—Another monthly statement of value to the management is one which shows the additions to the plant control accounts according to the classification of equipment and the department to which the additions are made. These represent the fixed assets. The supporting details are recorded on the plant ledger explained on p. 611. By a close watch over proposed expenditures for plant and equipment, large sums of money are saved, because it may be discovered that some of the proposed additions to plant and equipment are not vitally necessary to successful manufacturing.

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[6] See uniform system of the Folding Box Manufacturers' National Association.

SECTION 14

AUDITS AND WORKING PAPERS

CONTENTS

SECTION 14

AUDITS AND WORKING PAPERS

GENERAL.—The purpose of this section is to give an outline of procedure to be followed in the audit of the average business concern. Every business has some special points, every organization and every system their peculiarities. The auditor must have sufficient training and judgment to determine what should or should not be done in each audit. Principles involved in the application of accounting theory to problems presented in an audit are discussed in treatises on auditing.

DEFINITIONS.—An audit is an examination of the financial transactions of a business based to a large extent on the books, made, as a rule, to secure information necessary in the preparation of statements of financial position of the concern and of results of operations.

The classes of audits are:

- Balance sheet audits
- Detailed audits
- Cash audits
- Continuous audits
- Completed audits

A **balance sheet audit** is the verification of assets and liabilities and such an analysis of the income account as enables the auditor to certify that it has been properly stated.

A **detailed audit** differs from a balance sheet audit in that the transactions during a fiscal year must all be verified. The verification consists largely of review and tests; none the less, the tests should be made so that the general accuracy of transactions of the entire period under review will be determined.[1]

The **cash audit** covers a verification of the cash balance on hand at end of period and of cash receipts and disbursements for period in question.

Continuous audit is the designation given to examinations made monthly or at other regular intervals with the thought that through such examinations transactions of an entire period will be examined ultimately.

The expression **completed audit** is applied to an examination where a report is submitted after making an audit covering an entire period.

Preparation for the Audit

PRELIMINARY CONSIDERATIONS.—The audit of a concern begins when the auditor receives his first notification that an examination of the accounts will be made. Before commencing work familiarize yourself with

[1] See R. H. Montgomery, Auditing, Theory and Practice, Vol. I, p. 491.

the peculiar features of client's business; also make arrangements for the preparation by client's employees of certain data for use in the audit.

DATA RELATIVE TO INDUSTRY.—The auditor's report cannot be prepared intelligently unless he has some knowledge of the business in question and of current business conditions affecting the industry. As he cannot be expected to be conversant with data of this nature for all industries, he must in some cases collect information. Whenever possible this should be done before commencing the audit.

Data to be collected may be classified as follows:

1. Special conditions in the industry relative to prices, markets, labor rates, and foreign conditions. This information may usually be found in the trade papers covering the industry in question, or in commercial publications covering industries in general.
2. Special features in connection with finances, management, or accounts of the business in question.[2]
3. Uniform statements of operations or systems of cost accounting, published as a rule by an association representing a group of concerns in the industry, and in some cases by departments of the federal government or research associations.

STATEMENTS TO BE PREPARED BY CLIENT'S EMPLOYEES.—Considerable time can be saved by arranging in advance for client's employees to prepare certain statements, schedules, copies of documents, etc. Client's employees are as a rule very busy during the audit, which generally begins shortly after close of period under review. If request is made for certain statements during the audit or a few days before its completion, it is likely that the data cannot be compiled in time or that it will be furnished at the last moment and will delay completion of the audit. It is therefore advisable, where arrangements are made in advance, to request at that time that employees prepare certain statements, schedules, etc., for the audit.

The following list comprises some of the statements, schedules, etc., which employees of the client may be asked to prepare to facilitate the work and to permit the auditor to spend time on more important work.

List of bank balances (if there are many bank accounts).
List of cash funds.
List of cash items in transit.
List of notes receivable on hand (where not too numerous).
List of notes receivable out of office.
List of notes receivable discounted.
List of investments, including mortgages receivable.
List of special deposits made.
List of employees' accounts receivable (where not too numerous).
List of additions to plant during the period (if the items are very numerous, then a list of all items over a certain amount).
Statements of additions to and deductions from depreciation reserves during the period.
Schedules of prepaid insurance, interest, taxes, and other prepaid expenses.
Schedules of deferred charges such as bond discount, organization expenses, etc.
List of notes payable.

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[2] Montgomery's Auditing, Vol. II, and Kester's Accounting, Theory and Practice, Vol. III, give information of this nature for certain industries.

List of mortgages payable.
Schedule of accrued interest, taxes, wages, or other accruals.
List of special deposits held.
Schedule of purchase commitments.
Schedule of sales contracts.
Schedule of insurance carried.

While this number of statements is formidable, not all will be found necessary in any one audit and the items in each statement for one audit will not be numerous. Many of these statements may be simply copies of parts of certain records which can be prepared by typists with little assistance from the bookkeeper.

INFORMATION RELATIVE TO CLIENT'S ORGANIZATION.—Without violating any rules of professional ethics, obtain as much information as possible relative to client's organization before commencing the audit. Obtain names of principal officers and of directors who are especially active, as well as any special ideas relative to operation of the business which these individuals possess.

Upon arrival at client's office examine a copy of the organization chart and make notations of those departments or individuals with whom you will have close contact. In some cases there may be friction between certain executives of apparently equal rank. If you become cognizant of this in the early stages of the audit, you will be less likely to do anything which may antagonize such persons.

Endeavor during first days of the audit to ascertain the relationship between executives or employees and officers and directors of the concern under audit, with a view to determining extent of the authority vested in each.

DATA RELATIVE TO SYSTEM OF INTERNAL CHECK.—Before commencing any part of the work, familiarize yourself with the system of internal check. This expression is well explained in the following quotation:

> Such a system consists in the accounting records, methods, and details generally of an establishment being so laid out that no part of the account or procedure is under the absolute and independent control of any one person; that, on the contrary, the work of one employee is complementary to that of another; and that a continuous audit is made of the details of the business.[3]

Determine the extent to which any record will be examined only after making inquiries as to adequacy of the internal check. Make the examination in such manner that it will bring out any shortcomings in the system of internal check. For instance, as to **cash receipts**, ascertain:

1. Nature of receipts.
2. Who receives cash.
3. In what form it is received.
4. First record made of cash.
5. Who next handles cash.
6. Entries made to record its deposit.
7. Whether the day's receipts are deposited intact.

As to **disbursements by check** the auditor should make inquiries concerning:

1. Authorization to disburse.
2. Preparation of checks.
3. Signing of checks.

[3] Montgomery's Auditing, Theory and Practice, Vol. I, p. 62.

4. Mailing of checks.
5. Recording of disbursements.
6. Number of persons handling disbursements.

And as to **disbursements** in currency:

1. Whether on imprest system.
2. Number of persons handling.
3. Method of replenishing funds.
4. Authorization for replenishment and extent of examination of vouchers at that time.

Trace each movement of merchandise and supplies from time when they are ordered until their receipt, storage, and subsequent shipment or consumption. Investigate the records prepared in connection with payment for merchandise or supplies.

Ascertain whether work is so divided that the same person does not prepare pay-rolls and also prepare pay envelopes and make the payments, and whether there is an independent check by someone who has no other connection with the work.

Give same consideration to other parts of the work, such as accounts receivable, handling of income from investments, recording of additions to plant, depreciation, etc.

Bear in mind that fitness of employees for the respective positions and their general attitude towards their work have an important bearing on the efficacy of any system of internal check. Personal relationships between employees also have an important bearing on value of such a system. Note any relationship which may cause employees to be lax or partial and make allowance for such tendencies.

Planning the Audit

ADVANCE CONSIDERATIONS.—While the fact that a report will be prepared is not the principal reason for making an audit, in many cases the result of the audit in great measure depends on the impression the report makes on the client. Start preparation of your report as soon as you commence the audit.

When the client or an executive of the concern is interviewed before beginning the work, certain impressions may be obtained of the type of report which will make the desired appeal or of data which should be included or excluded from the report. It is helpful, when the report is being written, if notes of this nature and others have been collected in the course of the audit so that reference can be made to them.

Much time is wasted in some audits by preparing schedules or other data which appear interesting but have no value for report purposes. It may be advisable simply to note that consideration should be given to the inclusion of such data in the report and to defer actual preparation of material until audit is completed.

If **report of previous audit** is available examine it as early as possible. Make memoranda of items to be considered and of special statements or references which may be of assistance. Consider general arrangement of the report and subject matter reference to material which may be included in or omitted from the report to be prepared. The fact that comment has been made on certain facts in the last report may tend to minimize the value of similar comments in the next report. In addition, aim to prepare your report, so far as possible, in a form different from that of the preceding.

AUDIT PROGRAM.—An audit program is an outline of work which is to be done. It has its greatest value in continuous and in periodical audits, especially where much work can be entrusted to assistants.

Audit programs are usually prepared by the principal after inspecting the records to be examined. They should be prepared preferably as a whole rather than in sections, as it is then possible to determine whether the program is well balanced.

Sometimes the time allowed for the audit is limited and the auditor may use his discretion as to extent of work to be done. In such cases a flexible program should be prepared and notations be made which will permit increasing or decreasing of the work covered by certain sections of the program according to amount of time available.

Prepare the program **in sufficient detail.** Thus if there are three bank accounts, it should be arranged so that work for each account will be shown. It will then be possible to note on the program work completed on each account, so that status of the entire audit may be readily ascertained from the audit program.

Directions given in program should be clear and specific. There is always the possibility that some other person than he who prepares the outline may have to complete it and therefore interpret the directions. Thus the words "Check the pay-rolls" are susceptible of many interpretations. On the other hand, "Examine authorizations for additions to pay-rolls and for increases in rates," "Verify extensions and footings of pay-rolls for December," "Compare pay-roll totals with cash disbursements," are specific expressions which do not confuse and save time by requiring work to be done in proper order.

As each piece of work is completed make a notation on the program; also where you leave off at close of day or when called away to other work. If this procedure is followed, work may be taken up at that point by another auditor without difficulty.

The audit program, with all amendments and notations made during the audit, should be a **record of actual work done.** Questions often arise as to extent of work done, or it may be necessary to state in the report the extent of some of the work. As a rule it is not possible to answer these questions by referring to the working papers. The information in a complete audit program is often very helpful after the next audit is made. **Legal controversies** may develop and the auditor be required to testify as to extent of work done.

Some auditors of considerable experience do not prepare audit programs. Unless a record is made in working papers in such cases, there is no record of scope of work done in connection with each item covered. There is also the possibility that important items in mind early in the examination will be ultimately overlooked.

If the program of a previous examination is available, do not use it without first considering whether it is adequate to meet present needs of the business as well as the views of the auditor. There may have been changes in the system of internal check or developments in the business which call for revision of parts of the program.

SAMPLE AUDIT PROGRAM.—The program for a balance sheet audit given below should not be applied in toto to any audit. It is presented to indicate what should be included in some outlines. A medium-sized mercantile business, however, might have transactions and accounts similar to those considered in the present case.

Reference to the pamphlet issued by the Federal Reserve Board, entitled "Uniform Accounting: a Tentative Proposal submitted by the Federal Reserve Board, etc.," which contains "general instructions for a balance-sheet audit of a manufacturing or a merchandising concern," will be helpful in the preparation of audit programs.

In this connection consider the following from "Auditing, Theory and Practice," by R. H. Montgomery: "Nothing can be more harmful to students than the exclusive use of condensed rules of procedure; practitioners who rely on programs prepared by others are chargeable with negligence if they permit fixed rules to take the place of independent procedure."

AUDIT PROGRAM

A. B. C. Mercantile Co.

1. Cash on Hand:

Count cash on hand.
Note any unusual items in fund.
Prove totals with records.
Confer with treasurer regarding differences or unusual items in the fund.

2. Bank Balances:

Compare deposits on statement with cash book for last month: First National, Atlantic Trust.
Compare paid checks with cash book for last month—list checks drawn to order of cash, bearer, employees, etc.: First National, Atlantic Trust.
Reconcile bank balance: First National, Atlantic Trust.
Compare total bank balances with cash book.
Confirm bank balances by correspondence: First National, Atlantic Trust.
Examine entries covering old checks outstanding and deposits not recorded by banks.
Compare details of the deposits for the last week with cash book entries.
Examine those paid checks which were outstanding at date of last audit.
Verify footings of cash disbursements for last month.
Compare total deposits on statement with total cash receipts for last month.
Scrutinize cash entries for balance of period and for month following period.

3. Notes Receivable:

Compare notes on hand with record of notes.
Confirm notes out of office by correspondence.
Prove total of open items in record with ledger.
Make list of notes with rates of interest and due dates, or if too numerous, list overdue and special items.
Verify calculations for accrued interest.
Ascertain whether any notes discounted have maturity dates subsequent to close of period; if so, confirm such items by correspondence.
Confirm special notes or notes for large amounts by correspondence with makers.
Trace into books entries for items collected since close of period under review.

4. Accounts Receivable:

Compare balances in ledgers with trial balances, testing accuracy of a few balances.
Verify footings of trial balances.

Note any overdue or unusual items still unpaid, by placing a distinctive mark on trial balance, next to such items.
Ascertain whether balances represent specific items.
Confer with treasurer and credit man regarding overdue and unusual items.
Verify sufficiency of reserve for doubtful accounts, including provision for doubtful notes receivable.
Prepare separate totals for credit balances, items representing deposits made, balances due by officers, employees, affiliated companies, etc.
Check postings for 1 month, or if many accounts, 1 month's postings for a few letters of the alphabet.
Ascertain whether a reserve should be provided for discounts, freights, refunds, etc.
Ascertain whether any accounts have been hypothecated.
Examine entries covering bad debts written off.
Consider advisability of confirming accounts by correspondence.

5. Inventories:

Test extensions by scrutinizing columns for quantities, prices, and amount.
Verify footings of every tenth sheet, or any sheet totaling over $......
Verify transfer of amounts to summary and footings of summary.
Compare prices with those on purchased invoices.
Ascertain from outside sources the present market prices.
Make inquiries relative to obsolete stock, and items for which large quantities are carried.
Compare inventory in sections with previous inventory.
Ascertain whether any portion of stock is hypothecated. If a first audit, scrutinize inventory at beginning of period to determine general accuracy and whether it was prepared on same basis as current inventory. If perpetual inventory records are kept, make tests by comparing portions of physical inventory with corresponding entries in perpetual inventory records.
Where possible, make tests of quantities on hand by actual count.
Test the inventory totals by the "gross profit" method.

6. Investments:

Prepare or have prepared list of investments.
Examine securities, and collateral documents.
Verify income credits.
Compare cost price with present market price.
Compare list with records.
Confirm by correspondence investments not examined.

7. Prepaid Insurance, Interest, etc.:

Examine insurance policies, special contracts, etc., in connection with prepaid items.
Test calculations made, or make calculations for prepaid insurance, interest, etc.
Compare totals with ledger accounts.

8. Furniture and Fixtures:

Examine entries for additions and reductions during period.
Determine whether adequate provision has been made for depreciation.

9. Notes Payable:

Confirm amount outstanding by correspondence, including collateral if any.
Compare total with general ledger account.
Examine paid notes returned during last 3 months.
Verify amount of accrued or prepaid interest.

10. Accounts Payable:

Compare ledger balances with trial balance, noting overdue items.
Compare total with controlling account.

Compare creditors' statements with ledger balances, investigating differences.
Examine purchasing records, receiving records, unentered invoices, and entries subsequent to close of period for additional liabilities.
Prepare separate totals for items representing debit balances, deposits received, amounts due to officers, employees, and affiliated companies, etc.
Investigate purchase commitments, sales orders for future delivery, etc., to ascertain whether there is possibility of loss on such contracts.

11. **Accrued Liabilities:**
Test calculations or make calculations for accrued wages, rent, insurance, interest, taxes, etc. Compare totals with ledger balances.

12. **Capital:**
Examine capital stock records or confirm amount outstanding by correspondence with registrar.
Compare total with general ledger balance.

13. **Surplus:**
Examine changes during period.
Note any large or unusual items.
Obtain authority for changes requiring it.
Prepare summary of surplus changes for report.

14. **Voucher Register:**
Compare vouchers with entries in voucher register for portion of the period, noting nature of charge, special terms, approval, distribution, etc.
Scrutinize voucher register for balance of period, investigating any items not in order.
Verify cross-footings at close of month for a few months.
Ascertain whether method of preparing vouchers is such that client's interests are safeguarded.
Investigate whether all deductions are made before approving vouchers for payment—such as freight on f. o. b. destination shipments, allowances for containers, allowances on special contracts, etc.

15. **Pay-Rolls** (For large audits a short period should be examined):
Verify additions and increases by comparing with original records.
Verify totals of pay-rolls.
Compare amounts of pay-rolls with cash drawn for pay-rolls.
Ascertain how unclaimed wages are handled.
Investigate method of preparing pay-rolls and making payments to determine whether there is a good system of internal check.

16. **Journal:**
Examine entries for 1 or 2 months in detail.
Scrutinize entries for balance of period and investigate any unusual items.

17. **General Ledger:**
Verify trial balance or take off trial balance.
Check postings for 1 month.
Scrutinize ledger accounts, investigating unusual items.

18. **Sales:**
Test prices on a few invoices in last month of period and first month of next period to determine whether prices are being maintained.
Make tests to determine whether all items included in sales immediately preceding close of period were shipped.
Scrutinize return sales items for 1st month of next period to ascertain whether total is unusually high.
Investigate method of making allowances, scrutinize allowances for 1 month, and investigate large items during balance of period.
Investigate method of entering cash sales and handling proceeds.
Verify, or, if many items, test footings of sales record for 1 month.
Verify transfer of monthly sales totals to general ledger.

If possible, prove production figures by using quantities for inventory at beginning of period for production during period for net sales and for inventory at end of period.

19. **Minutes:**

Examine minutes, making notes of any items which require attention, such as dividends declared, salaries authorized, contracts consummated, etc.

20. **General:**

Test sufficiency of fire insurance carried.

See whether all officers and employees are bonded who should be.

If other insurance, such as use and occupancy, burglary, automobile, etc., is not carried, determine whether such insurance is needed in this case.

Investigate method of receiving and delivering merchandise and records prepared therefor.

This program is rather full and detailed, because intended to outline practically all work which may be done in balance sheet audits of small or medium-sized concerns.

Audit in Progress

SELECTING WORK TO RECEIVE FIRST CONSIDERATION.—There is no invariable rule as to order in which auditing work should be taken up. Before doing any part of it, in each engagement, survey it as a whole to determine whether you cannot to advantage vary from the regular procedure. In some cases an examination of leases, special contracts, and even the minutes, may give you an insight into special features of the business which will be of material assistance in every phase of the work—even in the examination of cash. Before starting any work you should, if possible, familiarize yourself with the records and method of making entries therein. Trace several entries through the records to get the connection between the various records. If you can picture in your mind the system of accounts, you can more easily ascertain to what extent there exists a good system of internal check. This information will make possible the determination not only of the work which should receive consideration but the extent of the examination to be made.

AUDITOR'S ATTITUDE TOWARD CLIENT'S EMPLOYEES.—You should be a student of human nature, capable of forming in a short time accurate impressions of the capabilities and peculiarities of persons encountered in your work. Conduct your examination with due regard to its effect upon progress of the regular work of client's staff. Make every effort to interfere as little as possible with the routine work of client's office while at same time conducting the audit in an efficient manner.

It is difficult to make a good audit without the co-operation of client's employees. Much of the work done consists of tests which do not cover the entire period. Therefore, it will probably be found that in many instances discussion with a friendly employee will develop points which may not be disclosed by tests made.

Your attitude towards client's employees should be one of helpfulness. They should look forward to your visits as occasions for discussion and improvement. If the employee is made to feel that he is in a position to impart to you information about his system or his line of business and that you are ever ready to learn, a bond of common interest will be created,

which will not only make the engagement more pleasant but create a desire on the employees' part for periodical examination of the records.

Use tact in bringing errors and differences to the attention of employees. If you request an employee to explain an entry known to be incorrect instead of referring to it as an error, sensitive employees will not be antagonized.

Discussions of accounting systems not operating efficiently should take the form of requests for information relative to operation of the systems. In many cases the first impression that the system is not operating efficiently is not well founded; had the first impression been made known friction might have resulted.

Be dignified but not formal, avoiding familiarity and conduct yourself so that you will receive from the employees the respect to which you are entitled.

EXAMINATION OF VOUCHERS.—The word **voucher** here denotes a purchase or expense invoice which has been examined and approved either for entry in a purchase book or for payment.

It is advisable to defer examination of vouchers until you have had opportunity to gain some knowledge of the organization and office methods and of the peculiarities of the business under examination. If you can secure a knowledge of the business equal to that of the highest accounting officer or clerk who approves the vouchers, conditions will be ideal.

When **detailed audits** are being made, examine practically all vouchers. For other audits examination of those for one or several months may suffice. Make the decision relative to the months to be examined after inspection of records as a whole and consideration of conditions in the particular audit. As a rule vouchers for last month of period will be examined in any case, except in audits of large concerns having effective internal audits. In such cases vouchers for part of a month only may be examined.

After you have examined vouchers for one or more months, scrutinize entries for months not examined. All entries for unusually large amounts or those which do not appear to be in order should be vouched.

Purposes for which vouchers are examined may be of two kinds: minor and major.

The **minor purpose** is to determine that the charge has been made on proper authority and that entry has been correctly made. Following steps should be taken in verification of vouchers for the minor purpose.

Obtain a list of names of those authorized to approve vouchers as to purchasing, receiving, prices, extensions and footings, distribution and payment. If possible, secure actual signatures or initials. Note any approvals missing or not in order. Distribution of voucher should be verified. Then compare voucher with voucher register or purchase book as to name of creditor, amount, and distribution of charge.

The minor purpose also includes verification of footings of various columns of the purchase journal and cross-footings at end of month.

In some audits, notably those of associations or of persons acting in a fiduciary capacity, vouchers should be submitted to auditors for every entry. Auditors should, in such cases, place a distinguishing mark next to those entries for which the vouchers have been produced. If at completion of audit some vouchers have not been produced, missing ones should be reported unless the paid check together with other documents on hand can be accepted as good evidence that the expenditure has been authorized and payment made. However, this may not be acceptable in some fiduciary audits where a receipt must be submitted for every payment.

In commercial audits nature of the purchase or expense is considered and

it is the exception rather than the rule for the auditor to insist on a receipt for the payment.

However, when many vouchers are missing or incomplete, the auditor should have in mind the effect which such items have on the system of internal check. If he suspects that many more such items exist and that this condition has a bad effect and may cause irregularities, he should make further tests. If the tests bear out his suspicions, he should report his conclusions.

The **major purpose** of the examination of vouchers is to determine, as far as can be ascertained from the vouchers, whether client's business is being operated efficiently and economically and every advantage is being taken of opportunities to increase profits and decrease expenses. The auditor should be qualified to judge whether advantage is being taken of every concession to which the client is entitled.

Examine vouchers or invoices critically to ascertain what creditors offer as to discounts, allowances, refunds, etc. Thus invoices may cover shipments made f. o. b. destination and no deductions appear for freight which may have been paid by the client and charged to an expense account upon receipt of goods. Invoice may indicate that special allowances are made if certain quantities are purchased during specified periods. Investigation may show that the quantity has been purchased but the allowance has not been claimed. Refunds may be allowed for containers returned, but it may be found that refunds have not been claimed and containers are going to waste. Cash discounts at nominal rates only may be taken advantage of, while other payments where discounts at substantial rates could be earned are made gross. Numerous purchases may be made in small quantities at a disadvantage both as to price and delivery, when contracts could be closed for larger quantities on better terms. Note other items of like nature and make suggestions for improvements or memoranda for further investigation.

POSTINGS AND FOOTINGS.—Verification of postings and footings is of minor interest in balance sheet audits, especially where there is an internal audit and the postings and footings are verified and tested periodically.

Postings.—Where one clerk takes care of all records, receiving and disbursing the cash, it is advisable to check all postings to general ledger and to make tests of a portion of the postings in other ledgers. If a detailed audit of the accounts of a medium-sized concern is being made, same procedure should be followed. In balance sheet audits postings of the general ledger may be checked for 1 or 2 months and short tests made of those in the subsidiary ledgers. In balance sheet audits of very large concerns no check need be made of postings.

If possible, make verification of postings by checking from ledger to books of original entry. After completing the check of all entries in the ledger, scrutinize books of original entry to make certain that all entries have been checked.

Footings.—It is impractical to set down definite rules as to extent to which footings should be verified. Wherever possible prove totals of any record which has been checked in detail against another record by comparison with totals in the other record. Where there is no system of internal check and a detailed audit is made, verify all totals of cash book and general ledger, at least, and check those of the other records. Where there is a good system of internal check and a balance sheet audit is made, tests of footings of general ledger and cash book should be sufficient.

Place a distinctive mark under or next to each total which has been verified.

VERIFICATION OF TRIAL BALANCES.—Verify the general ledger trial balance by comparison of the balance of each ledger account with the amount appearing in trial balance. Instead of verifying the client's trial balance, many auditors take off their own general ledger trial balance. When client's trial balance is verified the totals should be proved. Unless there is a large number of accounts, verify the trial balances or lists of accounts of subsidiary ledgers. Where number of accounts is large, say 5,000 or more, test by verifying the balances of several sections, and investigate method of controlling and balancing.

ANALYSES OF LEDGER ACCOUNTS.—Make analysis of those ledger accounts which are confused, or where it is necessary to have more detailed information for the report. A transcript of an account is not an analysis. It is generally understood by an analysis that items of a like nature are grouped together, i.e., according to the nature of the transaction (not all journal entries, for instance), and that a summary is prepared giving totals of such items and also that a list of the miscellaneous items is included.

Some audits are partly made by analysis, that is, by taking each ledger account and grouping items of a like nature and then comparing the groups with entries in subsidiary reports.

TESTS AND SCRUTINY.—Where entries are not verified in detail, the audit is made by "tests" and "scrutiny." Montgomery gives the following definition of tests: "To try by subjecting to some experiment, or by examination and comparison; to subject to conditions that disclose the true character of. An examination made for the purpose of proving or disproving some matter in doubt."

Since in many audits it is neither practicable nor advisable to examine entries in detail, the auditor must make some audits through examination of a part of the entries and a scrutiny or inspection of the balance of the entries for the period under review. Any entries in the period so inspected which do not appear to be in order should be subjected to thorough examination.

Working Papers

GENERAL CHARACTER.—Working papers should be a permanent record of the items noted and work completed in course of an audit. Prepare them in such manner that if properly indexed any auditor can readily locate data relative to any part of the audit. Working papers are sometimes used as an aid in giving testimony years after completion of the audit. The **prime requisites** of good working papers are:

1. Heading should clearly state the subject matter.
2. Items noted under each subject should be identified as to their date and source of information.
3. Point at issue or reason for the notation should be set forth specifically.
4. Conclusions arrived at or directions for disposition of the notation are necessary parts of the papers.

CLASSIFICATION.—Working papers generally come under one of the following headings:

1. Notations relative to errors or special items.
2. Schedules and statements, such as lists of prepaid or accrued items.

reconciliations of bank balances, copies of financial or other statements, etc.

3. Correspondence, and extracts from, or copies of records or documents.

NOTATIONS.—It is impossible to overestimate the importance of preparing clear, concise comments which cannot be misunderstood when examined by someone else or even by the writer himself a few days or a few months later.

Considerable time is lost on many audits because it is not possible, when necessary, to locate in records of client the item which is the subject of comment. In other instances the item in question can be located readily in the records but it is not possible to tell why it was listed. Some such comment as "General Expense—Jan. 26—$385.24—Investigate" is made, but an inspection of every record in which this item appears does not furnish reason for the investigation which the auditor has in mind at the time when the notation is made, and the auditor himself at a later date is not able to recall it.

The notations may be divided into the following **principal groups:**

1. Errors.
2. Memoranda for the report.
3. Differences to be investigated.
4. Data prepared as a matter of record or for future audits.
5. Items listed to secure approval of someone in authority.
6. Information listed to prepare adjusting or other entries.

One **basic rule** in connection with notations is thus stated by Montgomery:

> There should be an absolute rule, strictly adhered to, forbidding the writing of more than one class of errors on the same piece of paper. The reason for this is evident. The work covered is assumed to be a test only, and no one can tell how many errors may develop if additional verification is required.

In preparing notes, one side of the paper only should be used, and if possible all sheets should be of one size.

Notations should, wherever possible, be prepared in some definite order. If the auditor makes his notations in the following order, or similar arrangement, he should have no difficulty in preparing notations which will assist materially.

1. Date of entry or transaction.
2. Title or description of item.
3. Amount of item (if amount is in question).
4. Reason it is noted.
5. Correction to be made, if then known.

Carry the **amount** out to the right where it will stand by itself, unless there is reason why it should appear in the body of the notation. This facilitates locating an item where the amount is known.

After each notation, leave at least five lines to provide space not only for further comments which may be made relative to the same item, but to set off each notation.

Place a **distinctive mark** on each notation after it has served its purpose, so that it will be clear that nothing further need be done as to that item.

Word each comment so that it will convey the message intended at the time. It should be the auditor's aim to make notations which are specific, not rambling, disjointed phrases.

Make separate notations of data which might be included in the report.

It is good practice to have special sheets headed "Notes for the Report," on which these items may be inserted.

SCHEDULES.—The word **schedule** in this case designates various lists of accounts, revenue or expense items, extracts from accounts or from subsidiary records, statements covering reconciliations of bank balances, counts of cash, groups of figures, and summaries.

As mentioned elsewhere, there is a tendency on the part of some auditors to prepare many unnecessary schedules. Many statements are highly interesting but not essential to complete the audit or to prepare the report. Other statements should be included but the auditors should arrange for their preparation by client's employees rather than spend time making the required copies.

The **heading** given to a schedule should be so clear that there can be no doubt in the minds of anyone who examines it just what is included therein and what it was intended to exclude therefrom. After giving such a heading to the schedule the auditor should be careful not to include any other extraneous matter unless the heading is properly amended.

Frequently certain information is sought in the working papers but, due to misleading headings, it is impossible to locate the data required without examining practically every sheet.

Arrange data and figures included in a schedule in logical order so that whenever possible data listed will practically form a narrative of transactions involved. While these figures, without this logical arrangement, may lead to the same conclusion, it is likely that the schedule will not in that case be readily understood by those examining it.

Schedules or groups of figures which are part of a schedule are sometimes copied from records or statements. In such cases prove the totals or other calculations in connection with the figures copied independently, using the figures listed. Errors are frequently made in copying figures, to be discovered only when the records from which they were copied are no longer available. Be careful when making such extracts.

EXTRACTS FROM RECORDS OR DOCUMENTS.—Many documents are quite lengthy, in some cases 10 to 20 pages or more. A large portion of such documents may comprise introductory remarks, detailed descriptions, and special clauses having little or no bearing on points to be covered in the audit. The auditor must decide just how much should be taken from each document in order that he may have a record of the substance of the document in as few words as possible.

The **heading of the extract** should be a full description of the document, with date and any other data necessary to distinguish the document in question from similar documents. There may be, for instance, several contracts of the same nature, between the same concerns, made at different times.

If it is found necessary to have copies of whole sections of documents, request the client to have such sections typed for your use. In other cases it may be advisable to have a copy of the document as a whole furnished, or photostatic copies prepared.

DISPOSITION OF WORKING PAPERS.—The proper filing or sorting of working papers during course of the audit facilitates work and minimizes the possibility that you may overlook an important item while completing the audit. Sort papers so that notations of like nature may be kept together. Some auditors, for instance, keep in separate folders papers relating to cash, accounts receivable, inventories, etc. As the notations on various sheets

have served their purpose, they may be inserted in a separate folder marked "Completed" or with some other similar designation. However, make certain that every notation on sheets so transferred has received attention.

Mark each notation which has served its purpose so that anyone may follow developments and know the conclusions reached. Such expressions as "OK," "Adjusted," "Have investigated," are often meaningless and sometimes are the cause of a second investigation. Additional remarks should indicate in as few words as possible what was done and result of the inquiry or investigation. Place **distinctive marks** across notations to indicate that nothing further need be done.

After completion of audit, file working papers in logical order so that any auditor can locate readily any papers required. When filing papers, ascertain whether all headings on the various sheets are clear. There are many plans for **indexing** working papers, which are sufficiently comprehensive for papers of the average audit. The following index is useful for working papers of a small audit:

A – Cash
B – Notes Receivable
C – Accounts Receivable
D – Inventories
E – Prepaid and Deferred Expenses
F – Investments
G – Plant and Equipment and Reserves
H – Miscellaneous Assets
I – Notes Payable
J – Accounts Payable
K – Accrued Liabilities
L – Reserves
M – Miscellaneous Liabilities
N – Capital Stock
O – Surplus
P – Profit and Loss Items
Q – Miscellaneous Notes
R – (For additional headings)
S – " " "

The letters given above should be written on the lower left-hand corner of sheet or in some other prominent place, and the series of sheets for each of the above captions should be numbered from 1 up; i.e., three sheets for cash call for A1-3 and five sheets for accounts receivable, C1-5, etc.

Bind the sheets securely or place them in an envelope. On cover or on outside of envelope insert name of client, date of audit, type of work covered, nature of work done, names of those engaged in the audit, and such other data as is necessary.

WORKING PAPERS ILLUSTRATED.—
CAPITAL STOCK AND SURPLUS

Capital Stock

PRINCIPAL STOCKHOLDERS:

J. G. Ralston	630	shares
S. N. Allen	170	"
N. J. Curtis	350	"
W. G. Donaldson	135	"
A. E. Williams	160	"
M. C. Simpson	370	"
Miscellaneous (less than 50 shares each)	685	"
	2,500	"

Number of shares represented by each certificate outstanding appears on adding machine tape attached. All certificates from Nos. 1 to 97 inclusive are outstanding.

Stock ledger balances total 2,500

Surplus

Jan. 1.—Balance		$27,380.45
SUMMARY OF ENTRIES DURING YEAR:		
Profits for 6 months to June 30	$17,827.30	
" " " " " Dec. 31	38,918.44	
Proceeds of note T. L. Brown charged off 2 years ago	1,380.00	58,125.74
		$85,506.19
Less:		
Dividend paid Jan. 31—5%	$12,500.00	
" " July 31—5%	12,500.00	
Loss on sale of old machinery	3,842.00	
Miscellaneous small adjustments applicable to profits of prior years, net	389.60	29,231.60
Dec. 31—Balance		$56,274.59

LAND, BUILDINGS, MACHINERY, AND EQUIPMENT

Land

No change in account since last audit; purchase price, deed, etc., were investigated then	$ 40,000.00

Buildings

Jan. 1—Balance	$ 40,280.00
Mar. 15—Construction of special concrete outhouse to store gasoline, outhouse contracts and vouchers examined	1,840.00
Aug. 20—Receiving platform constructed near railroad siding. Transfer from repairs account examined—charges seem to be in order	930.00
Dec. 31—Balance	$ 43,050.00

Machinery and Equipment

Jan. 1—Balance		$137,890.00
Large items verified by inspection in plant and examination of vouchers, as follows:		
1 Drill and attachments	$1,690.00	
1 Special press # 397	2,840.00	
1 Automatic binder # 18-A	935.00	
Shafting and belting for these machines and installation	795.00	
1 Time-clock # 2-C	830.00	
1 Underwood special carriage typewriter with tabulators	520.00	7,610.00

It has been ascertained that none of these machines were purchased as a replacement but that they were required to expand or improve facilities.

Other vouchers for May and December were examined in detail and all entries appear to represent real additions.

Additions other than those mentioned totaled...........	$ 3,820.00
Dec. 31—Balance..............................	$149,320.00

DEPRECIATION RESERVES

Buildings

Jan. 1—Balance..............................	$12,832.40
$40,280 @ 3% per annum..........................	1,208.40
Dec. 31—Balance..............................	$14,040.80

Machinery and Equipment

Jan. 1—Balance..............................	$36,835.20
For the year $137,890 @ 7½%..........................	10,341.75
Dec. 31—Balance..............................	$47,176.95

EXAMINATION OF MINUTES, CONTRACTS, ETC.

Minutes

Jan. 20—Semiannual dividend of 5% declared payable on Jan. 31 to stockholders of record Dec. 31.

Apr. 19—President and Treasurer authorized to close contract with Avery Co. as of June 30 to purchase their output on special terms.

July 16—Semiannual dividend of 5%—payable July 31 to stockholders of record June 30.

Aug. 18—Treasurer authorized to loan J. G. Ralston, President, $2,000 on his demand note without interest. Salary of R. S. Thompson, General Manager, increased from $9,000 to $12,000 per annum, effective Sept. 1.

Examination of contract with Avery Co., dated June 30:

Provides for purchase of entire output of Avery Co. at current market prices.

Special discount of 5% if semiannual purchases exceed $30,000.

A deposit of $3,000 to be made which will bear interest at 6% payable annually, June 30.

Accounts to be settled promptly for purchases of each month on 10th of following month.

Examination of contract with T. V. Sampson, Sales Manager, dated Jan. 1.:

Drawing account of $375 monthly which is his guaranteed minimum.

Commission of 3% on all sales made directly.

Commission of 1% on all sales made through traveling salesmen.

Special commissions of 2% on amount by which total annual sales exceed $500,000.

All accounts over 90 days old to be excluded from sales in computing these commissions.

Examination of Lease of Premises Occupied for Warehouse Purposes

Period 5 years from Jan. 1—except as qualified later.

Rental $1,500 per annum payable monthly.

Lessor allows $600 per annum toward payment of taxes and ordinary repairs.

After first year lease can be canceled by lessor after expiration of first year on 90 days' notice by payment of $1,500 bonus to lessee and adjusting tax payments made.

RECONCILIATION OF BANK BALANCE

American Trust Co., Dec. 31, 19—

Balance per statement			$68,317.92
Add—Note of Albany Mfg. Co. protested, now returned, including $2.55 fees			252.55
Deposit of Dec. 31 not credited by trust company			1,892.00
Collection charges for December not entered in cash book			6.20
			$70,468.67
Less—Interest credited by bank not entered in cash book		$ 93.10	
Checks outstanding:			
6319	$ 50.00		
6682	125.00		
6714	73.10		
6	139.45		
7	68.25		
8	1,000.00	1,455.80	1,548.90
Balance per cash book			$68,919.77

INVENTORIES

Finished Goods

Page 7—3,390 lb. #37@26½¢	$ 898.35	
Should be @26½¢ per 100 lb	8.98	$889.37
" 12—One lot of various sizes of special ends formerly used—estimated value	$ 600.00	
Upon inquiry superintendent admits that best offer received for this material is	200.00	400.00
" 15—6,840 lb. #59-W@32¢	$2,188.80	
An examination of cost records indicates that present cost of manufacturing this article is 23¢, or a total of	1,573.20	615.60
Selling price was reduced lately from 55¢ to 39¢.		
" 23—Total of page stated at	$ 938.42	
Correct total	838.42	100.00
" 29—4,120 lb. #38-T@62½¢ extended	$3,375.00	
Should be	2,575.00	800.00

Page 33—8,520 lb. #38-T inventoried here in addition to 4,120 lb. carried on page —. Last year's inventory showed 5,300 lb. #38-T. Sales since Dec. 31 have been less than during corresponding period of last year and at reduced price of 60¢ as compared with former price of $1.10. Superintendent admits that demand for this article is lessening and in fact that #39-T is being sold instead. At our suggestion a reduction is made in inventory price from 62½¢ to 40¢. 13,820 lb. @ 22½¢		$3,109.50
" 47—6,340 lb. #43-R. A test is made of the quantities on hand. Allowance is made for sales and for quantities manufactured since Dec. 31, and it is found that inventory should call for 4,840 lb.—difference 1,500 lb. @ 42¢		630.00
Summary page 27 Carried forward as	$3,410.00	
Should be	3,140.00	270.00
TOTAL DEDUCTIONS		$6,814.47

Adjustments have been made to give effect to these deductions.

Inventory total before examination	$73,240.82
Less corrections	6,814.47
CORRECTED INVENTORY	$66,426.35

Count made of quantities on hand for many items indicates that quantities are correct. Item noted was the only difference and this was caused by an error of an unusual nature in stock record.

With changes noted, inventory appears to be valued at cost or market, whichever is lower.

EXAMINATION OF ACCOUNTS RECEIVABLE AT DECEMBER 31

(Accounts examined February 3)

Doubtful Accounts

	Balance	Reserve
Adams & Brown—August purchases. Dealing here many years—credit man says doubtful—say 50%	$ 198.20	$ 100.00
Carter Mfg. Co.—September. New customer—first purchase—does not reply to letters—both credit references doubtful—say 100%.	210.00	210.00
Dale & Dawson—June and July. Credit man insists good—past record good.	380.00	....
J. R. Evans & Co.—April to August. In hands of attorney—attorney reports doubtful—say 40%.	2,640.00	1,050.00
A. L. Jarlin, Jr., Bankrupt. Reports not favorable for large dividend 80%.	390.00	320.00

Gates & Brown—August and September. Credit man says he cannot understand delay—will place in attorney's hands if not paid shortly—say 20%.	350.00	70.00
A. J. Hanna—July. Cannot locate—say 75%.	620.00	460.00
Ives Mercantile Co.—August. Correspondence indicates account will be settled shortly.	410.00	....
Jason & Jason—September. Creditors' committee—say 20%.	1,320.00	260.00
A. L. Miller—October. Former employee—apparently will not pay—say 100%.	120.00	120.00
Nasmith, Jones & Co.—August. Correspondence indicates full settlement.	190.00	....
Total estimated reserve on these doubtful accounts		$2,590.00
Experience for past 5 years indicates an average loss of ¾ of 1% on charge sales.		
For accounts during last 90 days, sales $128,000 @ ¾%		960.00
Total estimated reserve required		$3,550.00

Note remarks following names, dates, and amounts were inserted after interviewing credit man and examining some of his correspondence.

Estimated reserve required	$ 3,550.00
Reserve per books	2,500.00
Additional amount to be reserved	$ 1,050.00

Summary of Accounts Receivable:

Customers' debit balances	$139,380.40
First Street Co. subsidiary	6,917.23
Officers' and employees' balances	8,384.19
Deposit on Avery Co. contract	5,000.00
	$159,681.82
Less credit balances	3,216.27
Balance accounts receivable	$156,465.55

ADJUSTMENTS

(a) Entries to be reversed Jan. 1.

(b) Entries made for our papers only.

(a) Accounts Receivable—Protested Notes	$ 252.55	
Cash—American Trust Co.		$ 252.55
To reduce cash balance and charge protested note of Albany Mfg. Co. $250 and protest fees $2.55 to special account (entered in January cash).		

(a) Miscellaneous Expenses	$ 6.20	
Cash—American Trust Co.		$ 6.20
To include collection charges for December as per American Trust Co. statement, in expenses of year just closed (entered in January cash).		
(a) Cash—American Trust Co.	$ 93.10	
Interest on Bank Balances		$ 93.10
To enter interest credited by American Trust Co. in their December statement (entered in January cash).		
Bad Debts	$ 1,050.00	
Reserve for Doubtful Accounts		$ 1,050.00
To increase reserve from $2,500 to $3,550, as per our estimate.		
Cost of Merchandise Sold	$ 6,814.47	
Inventory of Finished Goods		$ 6,814.47
To reduce inventory of finished goods as follows:		
Total before examination $ 73,240.82		
Corrected total 66,426.35		
$ 6,814.47		
Bad Debts	$ 600.00	
Reserve for Doubtful Accounts		$ 600.00
To set up additional reserve for probable loss on following notes receivable:		
Clarke, Niles & Co., Inc. $400 attorney says 50% $200		
Little, North & Co., Inc. $400 attorney says probably worthless $400		
(a) Accrued Interest on Notes Receivable	$ 35.00	
Interest Earned		$ 35.00
To enter accrued interest on note of Brown & Smith Co., $1,000, from June 1 to Dec. 31, at 6%. Treasurer states interest will be charged until collected.		
(b) Accounts Receivable—Customers	$139,380.40	
" " —Subsidiary Company	6,917.23	
" " —Officers and Employees	8,384.19	
Deposit on Contract	5,000.00	
Accounts Receivable		$156,465.55
Accounts Payable		3,216.27
To distribute accounts receivable for balance sheet purposes.		

(b) Notes Receivable—Customers............	$ 14,900.90	
" " —Subsidiary Company....	1,500.00	
" " —Officers and Employees.	2,000.00	
Notes Receivable..................		$ 18,400.90
To distribute notes receivable for balance sheet purposes.		

NOTES RECEIVABLE

Notes receivable examined which were overdue:	
May 31—Atlantic Mfg. Co., Inc., due Nov. 30, interest 6%—no indorsements..	$ 500.00
Company requested a 90-day extension which has been granted—expect to collect.	
June 1—Brown & Smith Co., due Dec. 1—interest not specified, indorsed by J. G. Blake & Co.....................	1,000.00
Indorsers agree to pay if maker does not settle by March 1. Treasurer says interest at 6% was agreed. See adjustments for accrual.	
Total notes receivable examined, all customers' notes including the above as per adding machine tape posted on this sheet..	11,340.90

Notes receivable out for collection with American Trust Co.:	
Allen & Smith, due Jan. 20..............................	$ 500.00
Cason, Jones & Co., due Feb. 10........................	600.00
Republic Mfg. Co., due Jan. 25.........................	250.00
Have bank confirm....................................	$ 1,350.00

Notes reported collected by the American Trust Co. since Dec. 31:	
Central Trading Co., due Jan. 5.........................	$ 380.00
Miller & Nolan, due Jan. 10.............................	430.00
	$ 810.00

Notes in hands of A. B. Drake, Esq., attorney for collection:	
Clarke, Niles & Co., Inc., due Sept. 30....................	$ 400.00
Attorney expects to collect 50%.	
Wilson Mercantile Co., due Aug. 31......................	600.00
Attorney has lien on property and expects to collect in full including expenses.	
Little, North Co., Inc., due Mar. 15......................	400.00
Attorney advises this note is probably worthless.	
	$ 1,400.00

See "Adjustments" for addition to reserve for doubtful accounts on account of Clarke, Niles & Co., Inc., and Little, North & Co., Inc. notes.

Notes of officers, etc.:

Aug. 31—J. G. Ralston payable on demand, no interest....	$ 2,000.00
(Mr. Ralston is the President of the Company.)	
Sept. 30—First Street Co., due Mar. 31, interest 6%......	1,500.00
This is a subsidiary.	

Summary of Notes Receivable:

Examined	$11,340.90
Out for collection	1,350.00
Collected since Dec. 31	810.00
In hands of attorney	1,400.00
First Street Co. subsidiary	1,500.00
J. D. Ralston, President	2,000.00
Total per ledger	$18,400.90

EXAMINATION OF VOUCHERS

Jan. 27—A. B. Stein & Co., 2 desks and chairs	$ 84.30
Charged to General Expense—see if this should not be charged to Furniture and Fixtures.	
Feb. 13—Cason & Dennis, paid Feb. 22	380.00
Terms 2%, 10 days—discount not deducted—why?	
Apr. 16—American Mfg. Co., special commission	218.00
No details; voucher not approved.	
May 9—New York Central freight on car N. Y. C. 101837 from Utica	183.40
See if this freight applied on goods purchased f. o. b. destination.	
June 17—Oceanic Metals Co., 1 special cutter #17 to replace old cutter for which $30 allowance was made	310.00
Charged to Repairs, Machinery—see if this should not be charged to Reserve for Depreciation.	
Aug. 10—United Transportation Co., for rent of touring car for Mr. Jones, salesman, 3 days	150.00
Charged to General Expense—see if this should not be charged to Selling Expense.	
Oct. 15—A. B. C. Mfg. Co. for 1 lathe	230.00
Charged to Repairs and Machinery—see if this should not be charged to Machinery account.	
Nov. 10—T. S. Watson, salesman	130.70
Commission not approved by Sales Manager.	

Cash

ITEMS INVOLVED.—Cash to be verified consists of one or more of following:

1. Petty cash funds
2. Branch office funds
3. Miscellaneous funds in custody of officers or employees

4. Receipts not as yet deposited
5. Bank balances
6. Funds in custody of other institutions or individuals
7. Cash in transit
8. Cash in foreign depositories

Wherever possible, count all cash on hand, including cash funds, simultaneously. If this is not possible, take precautions to prevent confusing of funds already counted with those to be counted. In some cases it may be necessary to place a seal on the package or receptacle, holding that part of cash already counted until balance of cash has been counted.

PETTY CASH FUNDS.—There is usually found, as part of the cash fund, vouchers and also memoranda representing cash. Examine the vouchers and, if possible, determine the propriety of expenditures during the count. Examine closely memoranda representing loans, advances, and miscellaneous disbursements to determine whether such memoranda truly represent amounts involved and also whether such items should be brought to attention of someone in authority. Other memoranda may represent charges to be made to expense or other accounts.

List items composing petty cash funds as to amounts only for such items as currency, bills, checks, or vouchers which are in order, etc., and in detail for those items to be investigated or reported, so that they can be taken up without further reference to the fund or client's record thereof.

Bear in mind during the count that the cashier may be ill at ease. Do everything possible to remove any nervousness on the part of the cashier. If differences or peculiar items are noted, they should be discussed with the cashier as if such items can without question be explained. However, this attitude should not prevent making a thorough investigation of such items.

BRANCH OFFICE FUNDS.—When arrangements are made for the auditor or his representative to visit the branch office, verification of the fund should be along lines outlined for a petty cash fund, with the possible exception that items representing disbursements made for account of the main office should be traced into to the main office records or confirmed at that office. If you do not visit the branch office, request someone in authority to furnish you a list of items composing the fund at a given date.

If the branch office is visited, bank balances, which may be a part of the branch office funds, should be verified in same manner as are home office bank accounts. If branch office is not visited, secure a certificate of the balance at a given date from the bank; a copy of the reconciliation of the balance should be forwarded to you for examination.

MISCELLANEOUS FUNDS IN CUSTODY OF OFFICERS OR EMPLOYEES.—Extent of verification of these funds depends on their amount and nature of the duties of the person in question. If a fund is relatively small, say $25 or $50, and is held by a salesman who does not handle any other cash for the firm, a confirmation by letter is sufficient. If the salesman is near at hand, however, the fund can just as easily be counted. Where these funds are large and are held by persons who handle other cash items, it is advisable, if possible, to count the funds and to make a verification of the other amounts for which such persons are responsible.

Where funds are confirmed by letter, make request for composition of the fund at time reply is made. To make certain that information desired is furnished, tell the holder of the fund that his reply should give the following information as to the fund:

1. Currency
2. Checks
3. Vouchers in detail
4. Memoranda in detail
5. Other items in detail
6. Total fund

The nature of the replies may be a revelation to the treasurer or the cashier.

RECEIPTS NOT YET DEPOSITED.—Make certain that when you call for all cash on hand, the cashier understands that receipts awaiting deposit are included in his request—otherwise you may discover later that other funds were on hand at the moment when the funds were counted. In such a contingency a question may arise whether all funds were really intact. Count receipts of this nature either at close or beginning of the business day, so that there will be no difficulty in proving such receipts with the records. In some cases it can be arranged that the cashier prepares his deposits for the bank from receipts on hand at the close or the beginning of the day, and the cash items making up the deposit can then be sealed until taken to bank, so as not to be confused with later receipts. An assistant should accompany the clerk making the deposit; in addition the deposit should be confirmed by correspondence direct with depositary. If this is done it is not necessary to count and prove with the records the later and undeposited receipts, and such a procedure serves to make certain that an amount equivalent to the day's recorded receipts was deposited.

BANK BALANCES.—Verification of bank balances generally consists of two operations, viz.:

1. Reconciliation of bank statement or passbook with client's cash records.
2. Confirmation by direct correspondence with depositaries of the balance appearing on statement or passbook and of any deposits in transit or other items in doubt, about which the bank may have knowledge.

Reconciliation of bank balance covers more than the preparation of a statement giving items necessary to reconcile client's bank balance with that reported by bank. The real purpose of this statement is to know the differences so that they may be investigated thoroughly. Entries in connection with checks outstanding should be examined, and, unless it is apparent why the checks should be undeposited, investigation should be made. It may develop that one check is outstanding because there is a dispute as to actual amount due. Another check may represent a duplicate payment, check for which is being held by creditor pending investigation.

When paid checks are being compared with cash records, examine the indorsements. Investigate checks for large amounts cashed or indorsed in blank. List all checks drawn to order of employees, "Bearer," "Cash," etc., for investigation if entries in cash records are not self-explanatory. Note other peculiarities for investigation.

Whether the examination covers all or only part of the period, items which do not appear in order should be investigated thoroughly; in fact, the merit of an examination of a short period consists, in large part, in that nothing in that period will be accepted unless absolutely in order, whereas too often examination of all checks issued during the period under review causes a loss of interest on the part of the auditor, with the result that an important item is overlooked and the favorable impression created by an otherwise good audit spoiled.

When deposits appearing on bank statement or passbook are compared with cash records, note the dates to make certain that receipts are not withheld a few days before their deposit.

Examine amount credited by bank for interest to determine whether rate of interest allowed is sufficiently high. Also examine charges for collection, etc., to determine whether excessive, and if total is high consider whether some other method of handling these transactions might bring about a saving.

Compare checks drawn for transfers between banks where there are two or more bank accounts with deposits representing transfers, and account for all such checks and deposits.

The letter to depositary requesting confirmation of the bank balance is generally dictated by the auditor and written on the client's letterhead. It should be signed by someone authorized to sign checks, as some depositaries refuse to recognize these letters unless the signature has been filed with them. Some auditors use their own letterheads or special forms with their names at the head and have the letter or form countersigned by client or his representative.

It is better to defer writing such letters until bank balances have been reconciled so there may be included requests for confirmation of deposits in transit or other items which should be confirmed by the depositary.

When the audit is made several months after close of period under review, question arises as to whether the bank balance of last month available should not be reconciled and confirmed in addition to that at close of period covered. Where cash receipts and cash disbursements are handled and recorded separately and each day's receipts are deposited separately and cash records appear to be in order, it is sufficient to reconcile and confirm the balance at close of period under review with a test verification in totals of the deposits recorded for subsequent receipts.

FUNDS IN CUSTODY OF OTHERS.—This caption does not include bank balances or funds in custody of officers and employees. Verification of funds in custody of others would generally be made by correspondence direct with holders of such funds. Satisfy yourself that persons or firms in question are reliable and that such funds are available for the purpose for which created. Also ascertain whether interest is being paid or accrued on these funds.

CASH IN TRANSIT.—Verify cash items in transit by inspection of the records or of reports prepared by forwarding and receiving offices. Where the examination is actually in progress at one or both offices at time of transfer of cash items, it may be possible to verify the actual forwarding and receipt and deposit of such items. In such cases the auditor of the forwarding office should immediately notify his co-worker at the receiving office so that he can inspect the cash upon its arrival.

CASH HELD IN FOREIGN COUNTRIES.—Supplement the usual verification of these funds as to the amount in foreign currency by a determination of the value of such funds in American currency. Unless there is some special reason, these amounts should be carried at rates of exchange prevalent at date of close of period under review and an adjustment made for difference between such values and book values.

CASH RECORDS.—Unless the concern under audit is large, having an adequate system of internal check, make certain tests of entries in cash records. The extent of these tests depends on size of the concern, adequacy of system of internal check, and scope of the audit.

Make tests of footings of cash records. Prove monthly amounts deposited with cash receipts.

When deposits per bank statement and paid checks are compared with the

records for a few months only, scrutinize entries for balance of period to ascertain whether all entries appear to be in order.

Compare composition of the deposits, if a record of details is available, with items representing the cash receipts, for a few days, to make certain that actual items received are deposited.

After verification of cash funds and bank balances, prove amounts thereof with balances in the records.

COMPOSITION OF CASH.—As a rule cash will be stated on the balance sheet either as:

Cash, or
$\left.\begin{array}{l}\text{Cash on hand}\\\text{Cash in banks}\end{array}\right\}$ or
Cash on hand and in banks

There is generally included in the cash on hand item a miscellaneous assortment of cash items. For instance, cash on hand may comprise any or all of the following:

1. Petty cash funds, including cash, checks, vouchers, memoranda, etc.
2. Cash advances to salesmen or other employees
3. Postage or other stamps (for nominal amounts only)
4. Cash on hand for deposit
5. Cash items in transit
6. Miscellaneous small deposits for which receipts are held in cash drawer

Make certain, before including any items in cash, that they are really of the nature of cash, that the amounts which do not represent currency or good checks are nominal only, and that the amounts can readily be converted into cash and can and will be used in current operations of the business. In any event, do not include items other than currency or good checks in a cash caption without qualification, if their sum is large in the aggregate and the total of such items represents a large portion of the cash item stated.

State cash funds held for a special purpose separately with proper qualification, unless amount involved is comparatively small.

Where there are several bank accounts and there is an overdraft in one or more accounts, do not state cash in bank as the net amount of all bank balances, unless the overdrafts are for nominal amounts which were made good shortly after close of the period. The overdraft, when stated separately, should be included among accounts payable.

Notes Receivable

PROCEDURE.—Notes receivable may be divided into four groups:

1. Notes on hand
2. Notes out for collection (not overdue)
3. Notes in hands of attorney or others (overdue)
4. Notes discounted (not due as yet)

Inspect **notes on hand** and compare with the **note record** or a list of the notes. The list of the notes should be prepared by client's employees, unless there are but few notes on hand. In the latter case you may prepare your list as you examine the notes. Compare the notes with the list or record as to date, name of maker, amount, due date, and rate of interest. Make nota-

tions as to rates of interest and names of indorsers, if any, and if there are no indorsers and no rate of interest is specified, note these facts, so that the data will be available if questions arise as to these points at a later date. Sometimes payments are made on account of notes and amount of such payments is entered on the note. Note the amount of such payment as a deduction from amount of the note.

Verify **notes out for collection** by correspondence with the bank or the other concern holding them. If there is a long list of such items, furnish the bank a list of the notes in duplicate, with a request that the list be examined and the copy returned with letter of confirmation. This list should contain a complete description of each note.

Some notes may have been collected since close of the period. Verify such collections by inspection of entries in cash records.

Overdue notes in hands of attorneys or others for collection should be verified by correspondence direct with holders thereof. Request should be made for the estimated realizable value of such notes.

The **total of these three groups** of notes should be compared with the Notes Receivable account and any differences should be located and adjusted.

Confirm **notes discounted** by correspondence with holders thereof.

It is as necessary to determine whether provision should be made for doubtful notes receivable as for accounts receivable. In some businesses notes given in payment of accounts are signs of credit weakness. In other businesses it is customary to give and take notes in connection with practically every transaction.

In examining accounts of concerns in the first group above mentioned, bear in mind that a reserve should be provided to cover practically all notes on hand. Make provision, as a rule, for old notes in hands of attorneys or others for collection which are not likely to be collected in full.

Make certain that the notes receivable received from others than customers—for instance, from affiliated companies, officers, etc.—are earmarked, so that they may be stated separately in the balance sheet.

Test calculations of accrued and prepaid interest on notes receivable. Do not include interest on overdue notes among assets unless it is reasonably certain that both principal and interest on such notes will be collected.

Scrutinize entries in the note record representing closed transactions, to ascertain to what extent notes on hand represent renewals of notes matured.

Accounts Receivable

CLASSIFICATION.—Consider the verification of balances representing accounts receivable under two main headings:

1. Customers' or trade accounts receivable.
2. Other accounts receivable

CUSTOMERS OR TRADE.—Work to be done in connection with the verification of balances of customers' accounts receivable varies in extent, depending on the size and general reputation of concern under audit, condition of accounts, and system of internal audit.

Small Concerns Without Internal Check.—Accounts of a very small concern having practically no system of internal check should be examined in some detail. Test postings, footings of accounts, and calculations of balances; and compare balances with the trial balance or list of balances. Verify footings of the trial balances and prove totals with controlling

accounts. Test postings of a section of the accounts receivable, especially those representing cash credited to the accounts. Ascertain whether all balances represent specific open items. Determine estimated value of the accounts.

Determination of the **value of the accounts** should be accomplished by scrutiny of the accounts and by placing a **distinctive mark** on the trial balance or other list next to the balances, or by listing the balances which can be allocated to any of the following groups:

1. Accounts which appear to be overdue, having in mind invoice terms.
2. Large balances in accounts where former balances have been comparatively small.
3. Accounts on which notations are found, such as "Bankrupt," "Deceased," "Cannot locate," or other expressions which might indicate that there is some doubt as to their being collectible.
4. Balances due from officers, employees, affiliated companies and depositaries.
5. Balances representing sales of equipment, scrap, etc., or charges made for services, or any charges other than those which are part of the regular business of the concern.

Review balances so marked or listed with the executive who handles credits. Examine the latest data available relative to each balance of this nature, and if the account does not seem to have full value, determine approximate amount which should be reserved to make provision for the doubtful accounts.

After all balances noted have been considered and total estimated provision for such balances have been figured, give consideration to the amount which should be provided for other balances not in the overdue period—for example, the balances representing transactions of the last 60 or 90 days. Based on past experience a **percentage** should be applied to the charge sales of the last 60 and 90 days, to determine amount to be reserved for these accounts. The sum of this amount and that provided for the overdue accounts, etc., represents the **reserve to be deducted** from the accounts so as to state them at estimated realizable value.

This procedure serves not only to value the accounts but to give the auditor information relative to the condition of the accounts and the ability of the executive handling credits.

Balances for very small amounts need not be considered in arriving at amount of the reserve for doubtful accounts unless such balances are numerous, in which case an estimate should be made for the amount to be provided for these balances as a whole.

If the small balances do not represent amounts owing for current transactions investigate them, as it is likely that these items should be closed out by credits for refunds, allowances, etc., or that they represent disputed balances which will probably not be collected. Ascertain whether disputed items and claims for refunds, allowances, etc., are on the increase, and bear in mind this tendency in valuation of the accounts and preparation of the report.

Total credit balances in the accounts receivable so as to state such items separately as a liability in the balance sheet. Examine such balances to make certain that there is an actual liability, or that the amount of the liability in each case is not in excess of the balance carried. If some of the credit balances represent deposits for substantial amounts made with creditors and others which are not repayable in a short period, state the aggregate

of such balances as an individual item so that the nature of this liability may be clear to anyone.

Determination of the value of the accounts necessitates consideration of possible **reductions** through discounts, allowances, freights, miscellaneous rebates, etc., not indicated in the accounts. An account which will be collected subsequent to date of balance sheet should not be carried at a greater value than the amounts which would have been added to the assets if the same account had been collected prior to such date. An amount should be reserved for discounts, etc., to be allowed subsequently.

Where the balances are fairly large and are owed by business concerns, but not by individuals, and in any event in case of balances due by affiliated companies, consider the advisability of confirming the balances by direct correspondence with each debtor. This is a real verification of customers' balances, if all requests for confirmation are complied with. However, many clients object to such confirmation, and when this method is used many debtors addressed will not reply to requests for confirmation.

Procedure generally followed in **verification of accounts receivable by correspondence** is as follows:

1. Statements are prepared by client's employees of balances as at date of audit.
2. Statements are compared by the auditor with ledger balances.
3. Either a letter requesting confirmation of the balance is enclosed with the statement, or confirmation is requested through a notation inserted with a rubber stamp on face of statement.
4. Statements should not leave custody of the auditor after they have been compared with ledger balances.
5. Statements should be mailed by the auditor and as a rule a stamped envelope addressed to the auditor should be enclosed for reply.
6. In some cases debtors are requested to communicate with the auditor only in event that the statement is found incorrect.
7. Replies received should be examined carefully and all differences thoroughly investigated.
8. If replies are received covering practically all accounts, those for which no replies are received should be scrutinized closely.

When the total of customers' balances is not in agreement with the control account, it is not the auditor's duty to locate the difference. Call the client's attention to the difference and the general condition of the accounts. A special arrangement may be determined on, whereby the auditor undertakes to place the accounts in agreement, but the auditor should be careful in such case not to underestimate the time necessary for such work if a fixed fee is arranged, or to permit the client to have too optimistic a view of the situation if the work is done at day rates.

As a rule the method of locating such differences which gives best results is by "reverse posting." This consists of a detailed analysis of the entries in the ledger so that the items for any given period are grouped according to their source. If possible, the groups are arranged in chronological order. Totals of each group are then compared with corresponding totals in books of original entry. The differences should be localized and located readily through this process.

Large Concerns With Good Systems of Internal Check.—Verification and valuation of accounts receivable in audits for this class of clients as a rule does not vary in the nature of work done, but primarily in the ex-

tent of the work. In the first instance, make a thorough study of the system of internal check, including an estimate of the ability of client's staff to follow the system outlined. The work as outlined for the examination of small concerns should then be performed for one or more sections of the accounts and a scrutiny be made of the unusual or extraordinary accounts in the other sections.

If the system for calculating the reserve for doubtful accounts followed by the client's staff is not adequate, examine all accounts with balances in excess of a fairly large amount, and as to these balances follow the procedure outlined for audits of small concerns.

Bad Debts Written Off.—Examine the accounts written off during the last 2 or 3 years and ascertain what is being done to follow up accounts where there is possibility of further realizations. Study the system of handling proceeds from such accounts to make certain that proceeds are properly accounted for.

Accounts Hypothecated.—Be on guard to note any hypothecated accounts. When authority for hypothecation does not appear in the minutes or in a contract submitted for the auditor's inspection and the amount borrowed through this method is stated as an ordinary loan, it may be difficult to ascertain whether or not the accounts are pledged. However, examination of a portion of the cash book entries and scrutiny of the period not examined, as well as examination of the interest, commission, and miscellaneous expense accounts, should bring to the auditor's attention certain peculiarities generally found when money is borrowed in this manner.

OTHER ACCOUNTS RECEIVABLE.—In many audits there are certain receivables which are either included in the balance sheet among accounts receivable or are stated separately. As these items partake of the nature of accounts receivable their verification is discussed under this heading.

C. O. D. Accounts.—Accounts which represent charges for merchandise, which charges will be collected on delivery of the merchandise, are generally referred to as C. O. D. (Cash on Delivery) accounts. As the examination generally begins several days or weeks after the close of the period, verification of such balances is usually not difficult, as it is possible to account for all outstanding C. O. D. items at close of the period by an inspection of the entries for cash receipts or for merchandise returns subsequent thereto. When a certain number of outstanding accounts are found after close of the period, ascertain why the accounts are allowed to stand for any length of time. Make certain that merchandise for the outstanding accounts not shipped to distant points is held and that it has not been included in the inventory. Consider the condition and value of this merchandise. It will be found that certain C. O. D. accounts for merchandise to be shipped to distant points are being handled by express companies, and that allowance must be made in those cases for time required for delivery and return of proceeds. For local C. O. D. items there is no reason, except in unusual cases, why the accounts should be outstanding more than 3 or 4 days.

Deposits.—Amounts deposited under special contracts, etc. (bank deposits excluded), are in the nature of receivables. If amount is large, confirm the deposit by correspondence with holder. Request for confirmation should include inquiries as to interest allowed, if any, and whether there are any liens, offsets, or special conditions which must be fulfilled before return of the deposit.

If amount of deposit is nominal and there is a receipt on hand which must be surrendered before return of the deposit, an inspection of such receipt

should be sufficient verification. This class of deposits includes amounts deposited with gas, water, or electric companies, and similar deposits.

Instalment Accounts.—As to verification of total outstanding, procedure to be followed for instalment accounts does not differ materially from that for other groups of accounts where numbers are large and individual balances small. The system of internal check must be studied closely, with reference to method of taking off trial balances.

As to valuation of these accounts, the important consideration is the number of periods elapsed without receiving the periodical amount owing, and past experience with debtor or with the class to which debtor may be allocated by client. While the concern doing an instalment business has the right to "replevin" the goods in question in case instalments are not forthcoming, proceeds from sales of merchandise replevined are generally not sufficient to cover balance owing on such account. As a rule, for purpose of deciding on amount to be reserved for doubtful accounts, the accounts are grouped according to number of periods elapsed since receipt of last instalment, special consideration being given to fairly large accounts or to accounts which for credit purposes are considered to be of a special nature.

Officers and Employees.—These accounts may aggregate a large sum in some audits and therefore require special consideration. As to the officers, executives, and those employees who have a good credit rating because they have special resources, consider the accounts on the same basis as accounts of other individuals. However, call attention to any of these accounts which are allowed to run for some time without some payments being made by debtors.

As to the other accounts settlements in whole or in part should be made periodically on a definite plan. Any deviation from the plan should be authorized by an executive, the reason for the exception being stated in the authorization.

Officers' and employees' accounts should be summarized so they may be stated separately in balance sheet.

SPECIAL CONSIDERATIONS.—Examine closely contracts for sale of product of the concern under audit and note conditions in such contracts which may have an effect on the valuation of the accounts or the inventories.

Investigate the method of putting through and approving credits for refunds, allowances, and merchandise returned. Try to ascertain whether many of such items are still to be passed. Investigate merchandise on hand which has been returned awaiting credit.

Scrutinize shipping records and consider the possibility of shipments being made without recording a sale. In some audits sales entries immediately preceding close of the period should be compared with entries in the shipping record.

SUMMARY OF ACCOUNTS RECEIVABLE ITEMS.—During the examination keep in mind the manner in which the various accounts receivable items will be stated in the balance sheet, i.e., as to whether or not they will be included among the current assets and whether certain classes of accounts receivable will be stated separately or be grouped with others as part of a miscellaneous item.

It will probably be necessary to provide for some or all of the following divisions of accounts receivable in course of several audits:

1. Customers
2. Employees and officers, for current transactions
3. C.O.D. accounts

4. Deposits repayable during a few months
5. Balances due by affiliated companies for current transactions
6. Deposits with mutual insurance associations or other associations
7. Deposits not repayable within the current year or at a fixed date
8. Accounts in hands of attorneys for collection
9. Accounts in suspense
10. Accounts pledged as collateral
11. Balances due by officers, not being liquidated currently
12. Balances due by affiliated companies, not being liquidated currently

Inventories

NATURE OF SUBJECT.—Verification and valuation of inventories cannot be completed solely by following certain definite rules. There are so many special features in connection with the organization or the methods of each concern which should be considered in every inventory examination that it is impossible to give instructions which can be followed in toto for any inventory investigation.

For convenience discussion of the examination of inventories will be divided into:

1. Verification of inventory quantities and amounts
2. Valuation of inventories

VERIFICATION OF QUANTITIES AND AMOUNTS.—Inventories to be verified may be in the form of:

1. Raw materials or finished goods
2. Merchandise in process of manufacture
3. Merchandise in storage covered by negotiable receipts

PRELIMINARY CONSIDERATIONS.—The first step in verification of quantities of inventories is to ascertain how inventory was taken. If a copy of instructions for taking inventory is available this should be examined, and if such instructions are not available, make inquiries relative to the following:

1. Arrangements made for recording merchandise received (including merchandise returned by customers) just prior to close of period and for recording that received just after close of period.
2. Method of segregating merchandise received on consignment or other merchandise not property of the concern.
3. Provision made for recording obsolete and other stock which does not have full value.
4. Method of checking accuracy of original count.
5. Safeguards against losing or misplacing tags, sheets, etc., used in inventory.
6. Procedure outlined to make certain that liabilities will be entered for all merchandise received in stock.
7. Method of recording units, dozen, gross, tons, etc., so that there will be no confusion when extensions are made.
8. System outlined for pricing inventory, for making extensions and footings, and checking these calculations.
9. Procedure followed in summarizing inventory sheets.

RAW MATERIALS OR FINISHED GOODS.—Verification of quantities of raw materials or finished goods is not a difficult task where merchandise

consists of large and valuable items and the auditor is present when inventory is being taken, or immediately thereafter. In such cases verify practically all quantities by actual count of articles and list comparison of your count with the items on inventory sheets. If, however, all the stock is not to be counted but tests are to be made, work from sheets to stock rather than from stock to sheets, to determine whether the items which have been listed are really in stock. While making the count, note condition of the articles.

If stock consists of many small articles with low unit prices, it is generally not feasible nor advisable to count a substantial portion of the whole inventory; be satisfied with an inspection of the stock as a whole. In such cases examine closely instructions given for taking inventory and question the men who were entrusted with taking the inventory to determine whether they may be depended on to take an accurate inventory. Where possible, endeavor to make tests of some quantities.

While the stock is being examined, make inquiries of storekeepers or persons familiar with the stock as to whether there is any **slow-moving stock** or stock **materially depreciated** in value. Select items here and there which appear to have been in stock for some time. If perpetual inventory records are available, examine the entries for these items to determine how long they have been in stock. If no inventory records are available, question persons familiar with the stock. Make similar inquires about unusually large items in the inventory.

Test general accuracy of the inventory books or sheets. The extent of this verification should depend on the system followed in preparing the sheets and the impression gained of the personnel handling the inventory work.

Test **prices** by comparison with prices for similar items, as shown by some of the late invoices. Also test inventory prices by comparing with the prices on invoices for sales subsequent to the period, to determine whether the prices are being maintained.

Make **tests of extensions.** A good method of making such tests is by scrutiny of each page of the quantity, price, and amount columns as a test of the extension for each comparatively large figure. For instance, if quantity of an inventory item is large, the amount should be correspondingly large unless unit price for such an item is very low, and same is true of an article which had a very high price—the amount would be high unless the quantity is very small. On the other hand, a large amount should arise from a comparatively large quantity or a high price. Through this method you should discover errors for substantial amounts and time taken for such verification should be relatively brief. With an inventory of, say, several hundred thousand dollars it is hardly worth while to endeavor to locate a certain number of small errors which might change the inventory total by only a few dollars. However, if it appears that there are many such errors, call attention to this condition and request a further check of the inventory calculations by client's employees. If there are comparatively few sheets, footings of dollars only for all sheets may be verified. If sheets are numerous, test footings of sheets by scrutiny of amounts and of total for each sheet, verifying those for which the details appear to aggregate more or less than the total listed.

Check the summary of the inventory in detail unless it is voluminous.

When scrutinizing the quantities and prices, note for further investigation any **peculiar items** not in order, as:

1 lot of scrap metal and parts....................	$1,320.00
Merchandise stored in room 14..................	935.00

Any large quantities should also be noted.

Note **names of parties** taking inventories and pricing stock, and of those making the extensions, and ascertain the capabilities of such persons for the tasks assigned.

Where possible make comparison of inventory totals by departments or in sections with the totals for similar departments or sections for the inventory of corresponding period of prior year. Investigate abnormal fluctuations in any department or section. Consider the activity of the sections or departments in connection with the inventory totals for such subdivisions.

If **sheets submitted** for examination are not the original record of the inventory, call for the original sheets or slips and compare some of these data with entries on inventory sheets to make certain that in copying the inventory sheets errors for substantial amounts were not made.

Make certain that all items listed in inventory are **property of client** and that no **liens** exist on any part of the stock.

Whether or not there is a **physical inventory** which can be verified directly with the stock when a **stock record** is maintained, make tests of the stock record to determine the general accuracy of quantities and prices appearing in such record.

In certain instances where inventories for succeeding periods are taken in practically the same order, it is advisable to compare some items to ascertain whether a large part of stock is being carried for a long period and has become obsolete.

Examine the **entries in receiving records** for a few days immediately preceding the end of the period and ascertain whether invoices covering these purchases were included among liabilities of the period. Scrutinize **invoices entered after close of period** to make certain they do not represent liabilities applicable to period under review.

MERCHANDISE IN PROCESS OF MANUFACTURE.—Verification of this item does not present any difficulties where there is a fairly accurate cost system. In such cases familiarize yourself with the method of making entries in cost records and make tests of a number of entries. Verify balances taken off as at close of period. If sufficient time has elapsed so that a certain number of items have been completed, examine cost of goods in process at end of period, subsequent entries, and cost of finished product for some of these items. It should be possible in this manner to ascertain whether the amount as stated for cost at end of the period was fair.

If there is no adequate cost system, it is difficult to determine whether the inventory of merchandise in process is even approximately correct. If amount of this stock is small and there are no indications that there should be a large inventory, little need be done. If amount of such inventory is fairly large, make sufficient tests of the figures presented and investigate thoroughly the method of preparing the figures.

MERCHANDISE COVERED BY NEGOTIABLE RECEIPTS.—Verify the quantities of this stock by inspection of receipts as well as by correspondence direct with the custodian.

INVENTORY CERTIFICATES.—Some auditors request from the officers or certain executives certificates relative to quantities, the price of inventories, and obsolete items therein. There is no harm in requesting such certificates, since it is likely that in some cases such request may bring out information which otherwise would not be forthcoming. However, the fact that such certificates are obtained does not relieve the auditor from any

responsibilities in connection with verification of quantities or of valuation of inventories.

VALUATION OF INVENTORIES.—As both "inventories" and "valuations" are covered in another section, valuation will be treated briefly here.

The general rule of valuation of inventories followed for many years is "cost or market, whichever is lower." During abnormal times it is necessary to value inventories on other bases. Thus where current replacement cost of an article appears to be less than cost, and market price, which is apparently an artificial price, is not representative of that which would really be paid if purchases were made then, it is right to value the inventory at less than "cost or market."

However, the general rule is probably the safest basis for valuation unless extraordinary conditions prevail; even then the inventory should not be valued on such a basis that a profit is anticipated. An exhaustive discussion of this phase of the valuation of inventories is given in Montgomery's "Auditing, Theory and Practice," Vol. I, pp. 116-162.

Value **finished goods** at cost, but the cost figure should only include manufacturing expense, not administrative or selling expense. Examine **overhead expenses** closely to determine whether items included are proper charges. Where goods are being manufactured under peculiar circumstances, such as part time operation or other conditions which create excessive costs, carry finished goods at market prices if such price is available and is less than cost prices.

Cash discounts are sometimes deducted from purchases in entering such items in the books. In such cases deduct the discount from prices used in the inventory.

Freight, duties, and other **incoming charges** are in some cases added to costs. There are proper additions to purchase prices for inventory purposes. Make certain in such cases that these additions to costs have been made properly.

In connection with valuation of inventories, give consideration to **purchase commitments for future delivery.** Ascertain whether quantities purchased are such that, while requirements of the future are provided for, such quantities are not excessive. Also make certain that prices at which these purchases have been made are such that a reasonable profit will be realized on future sales. If commitments, however, are insufficient to take care of future needs, consider the question of prices at which purchases must be made.

Any indication that the situation relative to future purchases will cause a loss should be the subject of a notation on the balance sheet.

Consider sales orders for future delivery in connection with current or future costs; any unfavorable condition in this respect should also be the subject of a balance sheet notation.

Merchandise on hand which has been **sold for future delivery** should not be valued on the basis of selling price less charges to be incurred when the transaction is completed. This serves to anticipate a profit which belongs to the next period. The many contingencies such as cancellation of orders, loss of merchandise through fire, insolvency of purchaser before delivery, make such a practice inadvisable.

SUPPLIES.—Inventory of supplies should be verified in practically the same manner as the merchandise inventory. The question of excessive quantities should receive serious consideration.

State inventories of supplies on the balance sheet separately from merchandise items.

In manutacturing audits it is usually advisable to state inventories in following detail:

1. Raw materials
2. Goods in process
3. Finished goods
4. Supplies

Investments

PROCEDURE.—The auditor's verification of investments may de divided into:

1. Verifying existence of and title to investments.
2. Valuation.

Verification of existence of investments is made either by inspection of the documents representing the investments if these can be examined, or by correspondence with the holders thereof if an examination cannot be arranged.

Ascertain whether the investments are in the name of the client or are in negotiable form. Note the description carefully to ascertain nature or class of the stock or bond. Note maturity dates of bonds not only as to years but also as to month and day, as some bonds are issued in series maturing annually, semiannually, monthly, or even semimonthly, and there is generally a difference in value of bonds with different maturity dates. Examine coupons attached to bonds to make certain that all unmatured coupons are intact.

Examine all investments on hand at one time to prevent the possibility of same items being submitted twice for inspection and thereby covering a shortage. It is advisable to have a list of investments as per records when inspecting the securities, to make certain that the items submitted are all those which should be on hand.

When verifying securities by correspondence ascertain not only that the securities are in client's name or in negotiable form but that they have not been pledged or hypothecated.

Where there are many security items and there is a possibility that the securities might be borrowed and later replaced, note dates of the stock certificates and the certificate numbers for comparison with brokers' invoices or other data received when securities were acquired.

If investments are in form of real estate bonds and mortgages, inspect all the papers in connection with the investment. Make certain that taxes have been paid, that sufficient insurance payable in case of loss to the mortgagee is carried, that title policies and appraisers certificates have been obtained. Verify balance outstanding by correspondence direct with mortgagor, and in some cases, where the amount is large or circumstances justify it, by inspection of public records. Ascertain whether all income has been collected.

Verify receipt of all income from bonds and stock and note whether the income is being collected promptly. If the income is large and interest is credited on bank balances, delay in such collections may cause loss.

Valuation of investments which have a ready market presents no difficulties, as it is generally possible to refer to quotations in current publications for prices or to obtain from reputable bankers or brokers prices for securites in question.

If there are no current market quotations for the investments, if the amount is nominal only and income is being received regularly at a fair rate, there can be no objection to carrying such items at cost. If, however, the amounts are large, the auditor should call for and examine the financial statements of the company. If no such statements are available and there is no return from the investments, note in the balance sheet that the investments are stated at book values without verification.

Investments available for sale are generally stated in the balance sheet at cost or market, whichever is lower, unless the difference in amount is not material, in which case cost is used.

Investments not available for sale should be stated at cost, with a notation of the market value.

Plant

INTRODUCTORY.—This expression is used to designate land, buildings, machinery, fixtures, and equipment used in operations of business under audit. Items of the same nature not in use but discarded and probably available for sale are treated under the caption "Other Assets." As the items in question are in use they are discussed from the point of view of a going concern.

If you made the previous audit, you are concerned only with verification of changes during the period. If, on the other hand, it is a first examination, examine the opening entries and principal changes subsequent thereto.

It may be found that there has been considerable confusion in the plant accounts through inclusion of many charges representing renewals or repairs, or that the opposite condition exists wherein a large number of additions have been charged to expenses instead of being capitalized. In such case make adjustments so that plant accounts will represent cost of plant then in use. Sometimes plant accounts are so confused that the balances cannot be considered an indication of plant values, and it may not be possible to trace the entries which should have been made therein. If this condition exists request an appraisal of plant.

Before making any decisions as to plant values or depreciation rates, visit the plant and note the general condition of building, machinery, and equipment. Encourage the superintendent or foreman to talk about the condition of plant, and policy of the concern relative to renewals and repairs. Inspect any large additions or renewals and ascertain reason for addition or renewal at this time. If economies or additional earnings are expected from such changes, make an effort to ascertain from records whether these expectations have been realized.

As a rule verify **plant items** separately in following order:

LAND.—Land should be carried at cost. Where possible, examine original papers in connection with acquisition of land. It is customary to include in cost of land all expenses of acquiring it, such as commissions, fees for title examination, survey fees, etc.

If the examination is a first audit, obtain a certificate from a title company or from an attorney to the effect that the title to the land is in client's name, which certificate should include a list of liens on the property for any purpose. However, if you are qualified to examine public records you can probably satisfy yourself relative to these matters without assistance.

BUILDINGS.—Carry this asset at cost. If any buildings have been purchased, examine the papers connected with the deals. Purchase price prob-

ably includes cost of land, which makes necessary a division of such price so that an amount may be stated separately for the building, in order to calculate periodical depreciation charges. If the building was constructed for client, examine contract and vouchers covering payments made to contractor to verify costs.

If building was constructed by client, examine the charges critically. Include all expenditures in connection with construction in cost of building, as for instance, architects' fees, building permits, inspection fees, salaries and expenses paid as a part of the business expenses directly chargeable to to construction. However, make certain that any overhead expenses apportioned to costs have been equitably prorated. If there is doubt as to such amounts they should be excluded. Interest paid on money borrowed for construction may be included as part of cost. However, take no profit on cost of the building even if total cost is less than estimates received for construction of building or less than cost of similar buildings.

Where some part of building cost has not been paid, add such amount to the assets and also include it among liabilities. Make certain that all buildings are in current use and that none are useless. If any buildings are available for sale, state them separately on the balance sheet.

LEASEHOLDS.—Such contracts are usually valued at purchase price, and annual charges are included among operating expenses so that the leasehold will be written off at its expiration. Examine the contract and make certain that it still has value, and that the amount and time on which periodical charges are based are correct.

MACHINERY, FIXTURES, AND EQUIPMENT.—Items in this account representing large amounts acquired through purchase for which vouchers are available are not difficult to verify. Besides examining the vouchers, ascertain that machinery in question is in use and that it does not represent a renewal or an article having a relatively short life.

The cost of **smaller units** may represent expenditures which should be charged to repairs. Determine that such charges are additions to plant. Depreciation rates applicable thereto should be considered.

Where machinery and fixtures are manufactured by the concern itself, consider the questions mentioned under "Buildings."

Cost of foundation and overhead and other fixtures installed with machinery should be capitalized.

Ascertain whether any machinery has been discarded or is obsolete. Consider the disposition of such items and their valuation. They should be carried at realizable values under such a heading as "Assets Available for Sale."

Verify **instalment payments** in plant accounts by inspection of contracts covering the instalments. Add the amount of instalments still to be paid to both plant account and liabilities. For depreciation purposes consider the total cost of such item from date of acquisition.

Certain **equipment** such as delivery equipment, office equipment, small tools, etc., should be stated separately from the machinery and fixtures, as they require special consideration for purposes of revaluation and depreciation. Small tools are generally revalued at close of each period. Due to the large number of these articles lost, mislaid, or destroyed, this is the best method of valuing this asset.

Some plant items are **deferred charges,** i.e., extraordinary repairs or improvements which are capitalized to be applied against earnings of a certain number of periods. Determine whether the items capitalized represent

extraordinary repairs and improvements, also whether future operations will benefit from these expenditures to such an extent as to justify deferring these charges. Satisfy yourself that the period over which these charges are deferred is not too long. Best practice is to charge such items as a whole to operating expenses when incurred, stating them as special items in the income account.

APPRECIATION.—Some concerns have appraisals made of plant, believing that actual value of plant at a given time is considerably in excess of book value. This appraisal may be made having in mind an increase of insurance carried or an interview with prospective purchasers.

The client may think that appreciated value should be placed on books. Nothing is to be gained by this procedure and you should try to prevent it. If, however, appreciated values are entered on books, increase should be credited to a special reserve or a special surplus account and this latter account should not be used for payment of dividends. Where appraised valuations are not entered on books, plant will be stated on balance sheet at cost and, if desired, a notation may be included giving appraised values.

Examine appraisal papers and satisfy yourself that they cover the plant in its entirety, but nothing else. Ascertain the basis of the valuations, especially if you are not familiar with the work of the appraisal company.

DEPRECIATION.—This is treated elsewhere in this volume. A few remarks are made here.

Depreciate **buildings** over the period of their life in use, the amount of depreciation being based on cost irrespective of present-day values. If buildings are erected on **leased lands,** life of lease should be considered so that value will be extinguished, at the latest, when lease terminates.

Depreciate **machinery, fixtures,** and **equipment** over their useful life, having in mind obsolescence and other causes operating to shorten apparent life.

Examine calculations made for the period under review and ascertain whether provision has been made on a similar basis in previous periods. Consider rates used in connection with estimated life of plant. Ascertain how plant items sold or scrapped have been handled.

When information is available, state the plant account so that the following items will be shown separately:

Land
Buildings net of depreciation
Machinery net of depreciation
Delivery equipment net of depreciation
Office furniture and fixtures net of depreciation

In some cases, where ample depreciation reserves have been provided, it may be advisable to state both cost and amount of the reserve for depreciation in each case so that client will get the benefit of the full provision made. Even in this case the reserve should be stated as a deduction from the asset item.

Other Assets

Several groups of assets cannot be classified under headings already mentioned. Verification of such items is discussed below.

STOCK SUBSCRIPTIONS.—Examine the contract for subscriptions. note dates on which calls are to be made and amounts to be paid on those dates. If these dates have passed and calls have been made without collecting

amounts subscribed, consider the financial responsibility of subscribers. Where number of subscriptions is not large and amounts are substantial, verify subscriptions by correspondence direct with subscribers. Subscriptions due within 60 days from responsible persons may be carried among current assets, but it is preferable to carry these among "Other Assets" rather than in the current asset group.

WASTING ASSETS.—Verification of wasting assets consists of an examination of the papers in connection with their acquisition to determine cost and charges for depletion. As a rule an estimate has been secured of the units the property will yield. The depletion charge represents an equivalent amount per unit which, if set aside as each unit is produced or extracted, serves to extinguish cost of property when all units have been recovered and marketed.

CONTINGENT ASSETS.—Ascertain whether there are contingent assets. If the amount of such assets is of consequence and there is a reasonable possibility of realizing something therefrom, mention them in the balance sheet. Thus the client may be suing in connection with the infringement of a right and developments of the case may be favorable. There may be a substantial amount due from an estate in bankruptcy and information may be submitted which indicates that a dividend will be paid. Question the officers of the company and the attorney relative to contingent assets.

TREASURY STOCK.—Examine certificates in custody of treasurer or other official with reference to date of issue and as to whether they are in company's name. Ascertain how dividends declared on such stock have been handled. Verify cost of such stock.

Accountants differ as to the method of showing this stock on the balance sheet. The majority favor stating treasury stock as a deduction from stock issued, with the difference between cost and par as a special reserve or special surplus. However, many accountants prefer to show treasury stock as an investment at cost.

PATENTS.—Ascertain cost of patents, which is the amount at which they should be carried. Write this amount off over the legal life of the patent, which is 17 years. However, if the value of the patent is materially less after a few years, it should be written off sooner.

COPYRIGHTS.—Like patents, copyrights are valued at cost and written off over their legal life, which is 28 years. In some cases, however, it is advisable to make greater reductions in the cost value of these assets, because their value may be diminishing rapidly from special causes.

SINKING FUNDS.—Verify assets held by trustee of the fund by direct correspondence. Also verify income from securities or other assets since the last examination. Enter this income in client's books in same manner as other income of the client.

GOOD-WILL.—This should be carried at purchase price. The auditor's work in connection with verification of good-will after it has been entered in books, consists in verifying its purchase price. Good accounting practice does not sanction arbitrary increase of the value of good-will.

However, when requested to determine the value of good-will of a business to be purchased, pursue recognized methods. See section on "Good-will."

One method generally followed consists in taking excess profits after allowing adequate executives' salaries and, say, 6% on the investment, and capitalizing such excess profits on the basis of 3 or 5 years' earnings.

Deferred Charges

DEFINITION.—The expression **deferred charges** is used to designate not only such items as bond discount and deferred selling expense, which are deferred charges, but also **prepaid expenses** such as prepaid insurance, rent, interest, etc., which have been expended for current operations and may have value in liquidation. It is preferable to make a distinction in the balance sheet between prepaid expenses incurred entirely for current operations and long-term expenses which may be charged off entirely when incurred if conservative accounting practice is followed.

Verification of deferred charges is treated in two parts, as outlined above.

PREPAID EXPENSES.—As a rule, calculations for prepaid expenses are made by client's employees and the auditor's duty consists in verifying such calculations and making certain that all such items have been included. There may be included under this heading some or all of the following prepaid items:

1. Advertising
2. Insurance
3. Interest
4. Rent
5. Salaries and Wages
6. Royalties
7. Taxes
8. Miscellaneous Expenses

Where calculations have not been made and the auditor must make them, he should arrange his working sheet so that the items will be listed or grouped to make possible the calculation in minimum time and to permit the preparation where possible in one operation of other data in connection with items listed. For instance, when verifying amounts of prepaid or accrued interest on loans payable, the items may be grouped as to maturity dates or as to names of lenders.

DEFERRED CHARGES.—Deferred charges not included in the category of prepaid expenses may be divided for purposes of verification into two parts: (1) deferred charges wherein the original expense by its nature can be allocated to a definite time in the future, and (2) other charges deferred for special reasons.

In verifying charges in the first group it is necessary to make certain that there remains a value to be deferred. For instance, expenditures in connection with **advertising campaigns** may be deferred over periods of 3 years, because benefits to be derived are spread over these periods. However, at the end of a year, due to changes which cannot be foreseen, there may be no further value to the advertising in question. In such case the amount should be written off.

There are expenditures for such items as **bond discount, lease expense,** and other deferred charges through which the expenses incurred in connection with a long-term contract are spread over period of the contract. It is not difficult to verify such items, as practically all that has to be considered is the amount, duration of contract, and the fact that the deferred charge still has future value.

When charges for **experimental expenses** and **organization expenses** are deferred, it is difficult to value these items. Consider first whether these expenditures should not have been absorbed in operating expenses when incurred. If it was proper to defer them, it is necessary to determine whether the period over which these items have been deferred is not too long. The deferred charges should be so stated in the balance sheet that the reader will not be deceived as to their nature. **Current prepaid expenses** should be

listed just below current assets, while **other deferred charges** may be listed below plant. Each of the latter items, if of reasonably large amount, should be stated separately, with full description.

Notes Payable

NOTES PAYABLE CLASSIFIED.—Notes payable may be divided for purposes of verification into four classes, viz., those given to—

1. Banks or bankers
2. Trade creditors
3. Affiliated companies
4. Officers, employees, etc.

VERIFICATION.—If feasible, it is preferable to verify the amount of notes payable by correspondence direct with holders thereof or their representatives. However, where there are many small items representing notes issued to trade creditors, which are in effect the same as current accounts payable, this procedure is not usually followed.

It is not sufficient to confirm only those notes payable which are recorded. The auditor should make certain that he has brought to light all such existing liabilities. Depositaries should be requested to furnish full account of liability for loans, notes, discounts, etc. Scrutinize the **cash book** for items which indicate liabilities in connection with notes outstanding. Examine **interest account** to determine whether there are charges for interest on loans or notes which have not been recorded. Examine **entries in officers' or partners' accounts** to make certain that proceeds of notes payable have not been credited there.

If collateral accompanies a note payable, verify the collateral by correspondence with holder.

Payments for fixed assets are sometimes made by issuing a series of notes payable at regular intervals. In some cases charges are made to the asset account as each note is paid. Examine entries of this nature in the plant accounts and ascertain, before setting up the liability for portion still to be paid, whether it is in the form of notes payable; at such times examine the indorsements to ascertain whether amounts paid in such cases were received indirectly by payee. Paste the paid notes preferably on the stub of the notes payable book.

Call for paid notes and compare them with entries representing discharge of the liability for such items.

Make inquiries as to whether it is customery to issue drafts or acceptances in payment for merchandise or debt, and if so, prepare a list of such acceptances to state the liability on the balance sheet.

Prepare a **summary of the notes payable** outstanding so that it may be possible to state separately, if necessary, the amount of notes due banks and bankers, trade creditors, affiliated companies, and officers and employees. In addition, where maturity dates of notes payable are spread over a long period, prepare a summary giving maturities within such periods as 30 days, 1 to 3 months, 3 to 6 months, 6 months to 1 year, and over 1 year.

Compare the total of notes payable outstanding with the ledger balance. Verify amount of interest prepaid and/or accrued interest on notes payable which has been calculated by client's employees; in the absence of such figures prepare them.

Accounts Payable

ITEMS OMITTED.—Verification of accounts payable outstanding as at date of balance sheet presents some difficulties. The auditor must assure himself that the accounts payable stated on the balance sheet represent the entire liability of client for such accounts.

If a complete record can be maintained of all purchases and contracts for services and supplies, it may not be difficult to determine whether all liabilites incurred and unpaid at date of balance sheet had been entered in books. However, as such a complete record is seldom kept, examine entries made subsequent to date of balance sheet and by inquiry from every possible source of information, ascertain whether all liabilities have been recorded.

PROCEDURE.—Investigate method of handling purchase invoices from time they are received in client's office until they are filed after payment. In some offices each invoice is registered upon its receipt and notations are made in the registers when invoices are returned to the office approved as to receipt of goods. Other concerns do not register invoices, and no record is made until invoice is approved and entered in purchase record.

Plan your work so that all invoices in the office at time of examination will be submitted for your inspection. If there is a **register of invoices,** investigate open items on this register representing invoices covering transactions during the period under review.

Investigate the method of making notations which indicate that goods have been received, also method of approving invoices as to quality and price.

Study the procedure followed in verification of extensions and footings and in placing the final approval before payments are made. Consider the possibility of making duplicate payments, also method followed in forwarding checks to creditors.

Compare the trial balance of the accounts payable ledger, or the list of vouchers payable, with their records and prove the total with the controlling account.

CREDITORS' STATEMENTS.—Compare creditors' statements with creditors' accounts and investigate the differences, however small.

Small differences may represent disputed items for discounts, refunds, etc., which will not be allowed by creditors. If these differences are of long standing, ascertain what is being done to adjust them and whether similar items are likely to arise periodically in future.

Some differences between creditors' statements and the records may relate to shipments in transit from creditors. Note these items so that they can be added to both assets and liabilities.

A statement should be produced for every creditor's balance. If suspicious about missing statements, insist on either the verification of such balances by correspondence or the production of duplicate statements.

RECEIVING RECORDS.—Compare entries in receiving records for a few days prior to close of period with invoices entered, to determine whether liabilities for all merchandise received have been entered in books. Some concerns set aside certain merchandise received shortly before close of the period, omitting this item from both inventory and accounts payable. Insist that these goods be included. A statement of such a firm's condition is not correct unless all known liabilities are included.

ENTRIES SUBSEQUENT TO CLOSE OF PERIOD.—Scrutinize entries made subsequent to close of period in purchase records, cash disbursements records, and other records of a similar nature, to make certain that no liabilities of the period under review have been entered in the following period.

FREIGHT PAYABLE.—The question of freight payable on merchandise which has been received is important in some lines of business where the article handled is low in price and transportation charges comparatively high. In such cases ascertain whether freight on all goods received either has been paid or has been set up as a liability. Such goods should be carried at a price including freight to destination, and freight be set up as a liability.

OVERDUE BALANCES.—Ascertain whether accounts payable consist of current balances not due, or of balances overdue. If there are balances overdue aggregating a substantial amount, this should be commented on in the report.

DEPOSITS.—Balances representing deposits made with the concern under audit should be stated separately from regular creditors' balances unless the amounts are comparatively small. The amounts of these balances should be confirmed by the depositors.

DEBIT BALANCES.—Debit balances of the accounts should be summarized and stated among the accounts receivable. If these balances are large, look into their nature and consider whether it may not be necessary to exclude such amounts from current assets because their collection may be deferred; or they may be offset against purchases.

CONSIGNMENT ACCOUNTS.—If there is merchandise on consignment, make certain that liability has been set up for that portion of consigned goods which has been sold. Amount due on account of goods sold and amount of merchandise on hand should be confirmed by correspondence with consignor.

JOINT VENTURES.—Ascertain whether any liability exists on account of joint ventures, the entire proceeds from which may have been collected by client.

GENERAL.—Some concerns enter all invoices net of cash discounts which they expect to deduct in making payments, in which case purchases and expenses are charged and accounts payable are credited at net amounts. If rate of discount is low and client has ample funds to discount his bills, there is no objection to this practice. As a rule, however, discounts are generally considered as earnings of the period in which payment is made and full amounts are set up as liabilities.

State accounts payable in the balance sheet so that amounts due each class of creditors may be ascertained. However, where amount due any class is relatively small, there is no objection to its being included with that for some other class. Accounts payable may be stated in the following detail:

1. Trade creditors
2. Officers and employees
3. Affiliated companies
4. Deposits
5. Credit balances of accounts receivable

Accrued Liabilities

CLASSIFICATION.—The expression "accrued liabilities" is used to designate accounts owing but not due which are not evidenced by invoices

or other definite form of account payable. Items for which invoices have been received should be included among accounts payable. Some items usually classed as accrued liabilities are:

1. Accrued wages
2. Accrued interest
3. Accrued taxes
4. Accrued royalties
5. Accrued insurance premiums
6. Accrued rent
7. Accrued traveling expense or other miscellaneous expenses

As a rule, calculations and entries for accrued liabilities are made by the bookkeeper. The auditor verifies these calculations and makes certain that all such items have been included. Prove the amounts with balances appearing in the ledger. Verification of these amounts includes an examination of the contracts on which the charges are based. Investigate terms of the contract to determine the necessity of the expenditure and whether the charge made is excessive.

COMMISSIONS.—A form of accrued liabilities which may easily escape detection is commission on sales, especially where salesmen receive salaries and a small commission in addition. Investigate commissions, refunds, or special discounts allowed customers. These amounts are sometimes deducted from settlements made by customers and no record is made until that time. Set up these commissions, etc., accrued to date of audit as liabilities or as deductions from assets.

LEGAL FEES.—Another form of liability which may easily be overlooked are legal fees. Lawyers, as a rule, do not send in bills promptly. As you will undoubtedly come into contact with some of the fruits of lawyers' work, ascertain whether the client has been billed and, if not, obtain a bill or at least an estimate of the expenditure incurred.

Foreign Accounts

CONVERSION RATES.—In addition to the usual verification of items held in foreign offices as such, the question of valuation of the balances is important. Convert cash and current items at rate prevalent at date of balance sheet. Carry fixed assets and permanent investments at cost, i.e., the rates which were in effect when the assets were acquired. There is no more justification for reducing the value of such assets, if they are used in operations of the business, when there is a drop in exchange rates, than there is for reduction of the amount at which plants in the United States are carried because values have dropped. Depreciation of these foreign assets should be based on full cost.

Bonds and Mortgages Payable

BONDS PAYABLE.—Verification of bonds payable is generally made by correspondence direct with the trustee. However, if the bond records are kept by the corporation, examine the bond ledger, making special note of bonds listed as being held by the treasurer. Examine canceled bonds, representing reduction of indebtedness, to make certain that they have been sufficiently mutilated to prevent being issued again.

If the bonds have been issued shortly before date of the examination, examine the minutes of the board of directors, also contracts for sale of the bonds, and trace proceeds through the records. As a rule, a copy of the bond

is preserved and attached to the minutes. Examine this carefully, noting any special stipulations. For instance, some bond issues define net income from which dividends are to be paid as the balance after deducting certain expenses, depreciation, etc., stipulating rates of depreciation. In such cases, insist that the stipulation be followed and, if it is not, call attention to the violation of the terms of the agreement if such violation is not apparent from the financial statements published. There may be provision for a sinking fund. Ascertain that the fund is created and kept up in accordance with the stipulations. Investments and cash held by trustee for the sinking fund should be confirmed and income from such investments verified.

Verify interest accrued on bonds. If coupons which have been paid are in custody of the client, make certain that they have been canceled so that they cannot be presented for payment a second time. If paid coupons have been destroyed by trustee, obtain a certificate from trustee relative to their disposition.

MORTGAGES PAYABLE.—Verify mortgages outstanding by correspondence direct with holders or their representatives. The confirmation should include not only amount of the mortgage and date of maturity, but also amount of interest due or accrued. If there are special conditions in connection with payments to be made, familiarize yourself with terms of the mortgage so that you can call attention to those conditions which have not been fulfilled. If considered necessary, inspect the public records to determine that the amount of the mortgage has not been understated. If doubtful as to whether you can make an intelligent examination of the public records, it may be advisable to employ a local lawyer or to resort to a title company for such service. This procedure should usually be followed if partial payments have been made on the mortgage and it is considered necessary to verify the fact that such payments have been recorded.

Note whether the mortgage is the direct liability of client or whether client purchased the property subject to a mortgage executed by previous owner. In the first case the client, in case of foreclosure, is liable for the deficiency, if any, after applying the proceeds of sale of properties, to full amount of the bond and all expenses; in the second case, mortgagee has recourse for such deficiency to the previous owner only. The mortgage mentioned in the second case should be stated on balance sheet as a deduction from value of property; in the first case it is necessary to state the mortgage so that it will appear among the liabilities in some form.

Reserves

CLASSIFICATION.—Reserves may be grouped under following principal headings:

1. Valuation reserves such as reserves for bad debts and for depreciation of machinery.
2. Reserves to set up estimated liabilities where actual amount of liability is not known.
3. Reserves to set aside profits or surplus for special purposes, such as for working capital or sinking funds.

Reserves of the first group have been discussed under headings for the respective assets.

Reserves to set up liabilities should be verified through an examination of all data in connection with each liability in question. This form of reserves

should not be used where the liability is definitely known and is represented either by an invoice, which should be included among accounts payable, or by charges accruing for specific amounts, which should be stated as accrued liabilities.

As an illustration, a reserve should be provided for estimated losses to be incurred in connection with employees' liability insurance carried by the concern itself. The auditor should ascertain the basis of the reserve, and from past experience of the concern determine whether amount reserved is approximately correct. A reserve should be provided for contingent liabilities, the amount of which can be estimated on the basis of data which indicates that an expense or a loss may be incurred.

RESERVES FOR TAXES.—Reserves are usually provided for federal and state income taxes. If preparation of the tax return is not a part of an auditor's duties, at least examine the calculation to satisfy yourself that the liability has been figured correctly. Also make inquiries relative to the possibility of additional liability in connection with taxes of prior years. Your knowledge of tax work should be such that you may know intuitively when special questions will arise which may cause large assessments to be made for income taxes for prior years. If not allowed to look into tax questions of prior years and you have a suspicion that large assessments may be levied, note on the balance sheet that the question of the tax liability of prior years has not been reviewed.

RESERVES OF INSURANCE COMPANIES.—Reserves are set up by insurance companies for unearned premiums and for losses not yet settled. The first mentioned reserve is not difficult to verify. The reserve for losses of insurance companies is an estimate of the amount which it is expected to pay on each of the large items, and as a rule a lump sum estimate for the smaller items. Verification of this reserve requires a certain amount of technical knowledge. However, as the auditor's work is generally done some time after the reserve is created, he usually has the advantage of knowing that a number of the losses have since been settled and that additional data has been received concerning others.

SURPLUS AND SECRET RESERVES.—Examine reserves mentioned in the third group in connection with data considered at time they were created. They are part of surplus and should not as a rule be placed with the liabilities.

The secret reserve is not a direct reserve but represents a condition which exists when assets are understated or liabilities are overstated, so that there is created a margin which cannot ordinarily be ascertained without a detailed examination of the records. Do not encourage the creation or continuance of such reserves unless certain that it is not done to deceive and that those who have knowledge of its existence will not use it for personal gains.

Contingent Liabilities

PROCEDURE.—Ascertaining the amount of contingent liabilities is, as a rule, not a simple task. Amounts of such contingent liabilities as those for **notes discounted** at bank or for the indorsement on paper held by bank with whom the client has funds can usually be determined through a request for such information as a part of the letter written to confirm the amount of the bank balances. Contingent liability for notes discounted elsewhere may be ascertained in some cases by an inspection of the proceeds of notes receiv-

able and a comparison of such entries with entries in the record of notes with special reference to maturity dates.

Contingent liabilities for **indorsements** and **guaranties** other than those to depositaries should arise in case of corporations only after authority has been granted by directors as evidenced by the minutes of their meetings. However, in many cases such liabilities may be created, especially in connection with the transaction of affiliated companies or subsidiaries, without specific authority for each transaction. Make inquiry of the officers relative to such items. In some cases it may be advisable to request the officers to make their replies in writing so that the auditor will have a permanent record. The company's counsel should also be asked to furnish a statement of contingent liabilities.

Another class of contingent liabilities consists of claims contested by client. As a rule these items are not entered in the books of account. However, it is quite likely that legal fees or expenses in connection with such litigation will be found in the records and that a record of these items may be found in the minutes. Letters to company's counsel should also cover this class of contingent liabilities. There may also be contingent liabilities in connection with unfulfilled contracts, which should be noted in an examination of the contracts.

Other Liabilities

Certain liabilities should be considered in every audit which cannot be classified under preceding headings.

CONTRACTS FOR FUTURE DELIVERY.—There is no present obligation to make a payment in connection with contracts of this nature and in some cases no liability will arise, since the goods ordered may not be delivered. However, examine such contracts, ascertain the extent of the liability, consider the client's ability to meet the payments, and also ascertain whether the prices of the goods ordered have been reduced appreciably since placing the order. If client may not be able to meet the payments, a notation of amount and dates of payments should be made on the balance sheet and the question should be discussed in the report.

JUDGMENTS.—Make certain that there are no liabilities on account of judgments entered against the concern. Sometimes data relative to judgments will be found in the lawyers' bills or in the minutes. If there is ground for suspicion that there are judgments entered against the client, search the public records. If not competent to make search, employ an attorney.

AUDIT FEES.—It is usually stated that all liabilities must be included in the balance sheet. There is probably one exception to this rule, since it is not customary to include among the liabilities the amount of the audit fees except where liquidating accounts are prepared. As a rule it is not possible, except where there is a fixed fee, to determine the actual liability before completing the audit.

CERTIFICATES AND COUPONS NOT REDEEMED.—Some concerns sell special certificates, coupons, etc., to be surrendered when merchandise is purchased. An amount should be set up for liability for unredeemed certificates and coupons at date of balance sheet. Examine the stubs or other records of the issue of these certificates or coupons, also entries covering delivery of merchandise for which certificates, etc., have been surrendered.

CONTAINERS.—Where containers, i.e., bottles, barrels, etc., are billed to customers at a price greater than their value in use, with the provision that refunds will be made on their return, a liability should be provided for the amount by which the amounts billed for the outstanding containers exceed their value. Investigate the method of handling returned containers, to ascertain whether there is any possibility of containers from other concerns being accepted. Ascertain whether refunds are made for containers in poor condition.

UNCLAIMED DIVIDENDS.—Entries in this account should be scrutinized to determine whether all unclaimed dividends have been credited. Payments made subsequently to stockholders claiming such dividends should be examined closely, receipts therefor submitted for inspection, and indorsement on the paid check examined. Payments made in currency and charged to this account should be considered with suspicion, especially if the dividends have been unclaimed for several years.

Capital Stock

VERIFICATION.—Examine a copy of the certificate of incorporation to ascertain amount of capital stock authorized and kinds of capital stock, i.e., first preferred, second preferred, common, etc. At time of such examination preferences or special stipulations should be noted. The amount of capital stock outstanding which is reflected in the accounts should be verified by correspondence direct with registrar or by examining the capital stock ledger and stubs of stock certificate books. Ascertain, in connection with the verification of the outstanding capital stock, whether there are any dividends accumulated on preference stocks. Make notation on balance sheet of amount of such dividends, if any, so that present or prospective holders of other stock issues may know their status as to future dividend payments.

Examine the **capital stock ledger** to ascertain whether balances therein are in agreement with stubs for stock certificates outstanding. Where periodic audits are made and there are few or no changes made in the stockholders, it is not necessary to examine all stubs at each audit. If a distinctive mark is placed on the stub for the last number outstanding, a verification of the changes is sufficient. Canceled certificates surrendered during the period should be examined.

Some auditors prepare, during the first audit, lists of stockholders, which are checked and brought up to date at subsequent audits, instead of preparing new lists at each audit.

DIVIDEND.—Verify rate and payment date of dividends by reference to the minutes. Make certain that dividends have been declared in accordance with legal requirements. If the dividends are paid by the corporation itself and the items are not too numerous, paid checks covering dividend disbursements should be examined. Ascertain how dividends are paid on the stock which the entries in the stock ledger or stubs indicate to be treasury stock.

SUBSCRIPTIONS TO BE COLLECTED.—Where there are subscriptions to capital stock to be collected, investigate the agreement for the subscriptions, and call attention to any subscriptions overdue. The question as to whether such debtors can pay should be looked into, so that the subscriptions may be stated properly on the balance sheet.

NO-PAR-VALUE STOCK.—Verification of no-par-value stock should be made in the same manner as for par-value stock. As to the amount at which this stock is stated in the balance sheet, examine the minutes and all other documents in connection with the stock issue to ascertain whether the stock is carried at values authorized by the directors and in accordance with the laws of the state in which the corporation is organized.

STOCK SOLD AT A PREMIUM.—Where capital stock has been sold at a premium, see that such premium is carried as capital surplus, or in some similar account. Make certain that such surplus is not used for regular cash dividends, which should be declared from the earned surplus.

SPECIAL STIPULATIONS IN CONNECTION WITH STOCK ISSUES.—In many cases preferred stocks and other stocks are issued with special stipulations through which issuing company agrees to do or to refrain from doing certain things. For instance, it may be stipulated that issuing company will maintain at all times a certain ratio of current assets to current liabilities or that no dividends shall be paid on common stock which will reduce surplus below a certain amount. Acquaint yourself with all the stipulations and ascertain whether the provisions have been carried out. Any neglect in this connection should be reported by the auditor. Persons who know that the accounts are being examined look to you to protect their interests.

Surplus

EXAMINATION REQUIRED.—Make such examination of this account as will enable you to have in your papers a complete statement of changes during the period. If the audit is the first examination made, prepare a summary of the principal changes in the Surplus account from organization of company to date, or at least for a period of years. For example, unusual adjustments should be noted, since they may give a clue to substantial changes in asset values.

ADJUSTMENTS FOR PAST PERIODS.—Some concerns charge or credit to Surplus account all items affecting prior periods which come to the surface after books have been closed. In many cases these items are comparatively small and are of such nature that similar items are likely to be omitted from figures for current year. Unless these transactions are large in amount and unusual in nature, nothing is gained by charging them to surplus instead of current operations. If desired to have such amounts stand out in the Profit and Loss account, state them separately. Inclusion of many such items in surplus frequently confuses the results of operations as reflected by the change in the Surplus account and makes necessary special explanations to clearly state the surplus changes for the period.

MISCELLANEOUS.—Ascertain whether entries in Surplus account have been made after proper authorization. Also consider the effect of such entries on statements of operations prepared monthly or at other regular intervals.

Conservative accounting demands that items which may be considered to be special earnings should be credited to surplus only after considering the advisability of reserving such amounts to take care of losses in similar transactions or even of other losses or of contingencies. For instance, what appears to be a gain on a sale of discarded machinery may, when sales of similar items of later years are considered, be in effect an offset to a loss, and it is likely that the results of such sales over a period of years may indicate

a net loss. It is, therefore, preferable in such cases to credit the excess in the first case to a reserve account.

If a certain portion of surplus has been appropriated or set aside for a definite purpose, ascertain whether the amount in question has been transferred to a separate account. Also verify the items charged against such surplus to make certain that these charges were made in accordance with provisions creating this special surplus.

Record **capital surplus** separately. Ascertain whether the changes made in such surplus were proper charges or credits to this account. Capital surplus may arise from any of following causes:

1. Sale of capital stock at a premium.
2. Gifts.
3. Sales of capital assets at a profit.
4. Increases in asset values through reappraisals.
5. Capital contributed by stockholders without issuance of additional stock.
6. An excess of assets over liabilities and capital stock at time of incorporation of company.

The two last-named items are usually called **paid-in surplus.** Cash dividends should not be paid from balances in Capital Surplus account.

On the balance sheet, appropriated or special surplus or the cash surplus should be clearly stated. Use the expression **surplus** without qualification only to designate earned surplus available for dividends.

Capital and Income

MEASURE OF INCOME.—A most important duty of the auditor is to make a clear distinction between changes which affect capital assets and those which increase or decrease income.

The income of a business has been defined as the amount by which net worth at end of the period exceeds net worth at beginning of the period.

Eliminating dividends declared and special surplus adjustments, increase in surplus is represented by the amount of net income for the period. This increase in surplus must be reflected in changes in asset and liability balances. If asset and liability balances are incorrect because of errors in determining whether certain items were capital or income entries, income account cannot be correct.

REPAIRS, RENEWALS, ADDITIONS.—Scrutinize charges to these accounts to ascertain that entries have been correctly allocated. Items representing operating expenses of the business should be included in repairs. If these items are erroneously considered as renewals and charged against the depreciation reserve or as additions and capitalized, expenses are understated and assets overstated. If renewals or additions are included in expenses, the opposite condition prevails.

APPRECIATION IN VALUE OF ASSETS.—It is not good practice to credit appreciation of assets to profit and loss. If there is reason for taking appreciation on assets, offsetting credit should be to capital surplus or to a special reserve account. No profit is realized when assets are appreciated.

SALE OF CAPITAL ASSETS.—Credit excess of sale price of capital assets over their depreciated value to a special reserve account or to capital surplus, rather than consider such amount as earnings. However, where the difference is relatively small it is generally carried to earned surplus.

WORK IN PROGRESS.—Treatment of profit on this item requires special consideration. Conservative practice is to defer taking profits until work is completed. In some cases, however, where the job as a whole can be segregated into definite sections, and it is apparent that the cost of sections to be completed will not exceed the amount allowed for it, it may be possible to determine profit made on sections completed. A safe rule, however, is to defer profit-taking until the entire job is completed, as many unforeseen contingencies may arise to increase cost of the uncompleted sections so that there will be no profit on the job as a whole.

INTERCOMPANY AND DEPARTMENTAL TRANSACTIONS.—Exercise care to eliminate intercompany or departmental profit on goods not yet sold to outsiders. Items billed to other departments and to affiliated companies at a profit may subsequently be sold at a loss.

Revenue

SALES.—When verifying revenue from sales determine:

1. That all goods which have been shipped or delivered were recorded as sales transactions.
2. That sales invoices have been correctly prepared as to prices, terms, extensions, etc.
3. That proceeds from sales have been accounted for.

The extent of work done in this verification depends in large measure on the system of internal check. Time may be wasted, unless the auditor considers work done by clients' employees before he starts verification of revenue from sales.

RECORD OF SALES TRANSACTIONS.—Except in the audits of large concerns having adequate systems of internal check, compare, for a short period, the entries for merchandise shipped with the sales orders. Investigate shipments made for which no sales orders are found to make certain that such items have either been billed or are included in cash sales and that the transactions are regular. Sales orders should then be compared with sales invoices, as a test that such items have been billed.

While examining shipping records list any shipments of discarded machinery, scrap, containers, etc., so as to trace into the records the proceeds of such sales. Make inquiry of the shipping clerk as to method of handling shipments of such material, since it is likely that shipments of this nature may not be recorded or perhaps only recorded now and then.

Consider at this time possibility of merchandise shipments being made without a record therof.

SALES INVOICES.—Ascertain whether sales invoices have been prepared in such manner that the client does not suffer loss because of errors or misunderstandings as to prices, terms, etc., or, in lesser degree, because of errors in calculations. Compare prices on a certain number of invoices, preferably those near close of period, with price lists, catalogues, or other permanent record of prices. At the same time test the terms by comparison with data relative to discounts, allowances, etc.

Examine a few invoices for shipments after close of period to ascertain whether the prices are being maintained. A considerable reduction may have been made in prices. Consider this factor in connection with inventory valuation and, if the difference is subtracted, a reduction in the inventory prices may be made or a notation may be made on the balance sheet.

Examine credit memoranda issued subsequent to the close of the period for merchandise returned, allowances, refunds, etc. If returns are excessive, consider the advisability of including them among the entries for the period under review. This may also be true of refunds and allowances.

Test credits to customers' accounts representing refunds and allowances, to ascertain whether such credits have been approved by someone in authority, and to make certain that these credits are not abnormal.

Except in audits of large enterprises having good systems of internal check, test the accuracy of the summaries of invoices and distribution of sales and sales returns.

ACCOUNTING FOR PROCEEDS OF SALES.—Sales are represented either by direct receipt of cash, as in case of cash sales, or by charges to customers. Verify the charges made to these two groups of accounts. As to cash sales, ascertain how proceeds are handled, whether the day's cash total is checked against the summary of the detailed record of cash sales and whether slips provided for cash sales are all accounted for. Make tests of the slips for a short period, proving them in totals against corresponding cash entries.

Compare totals of charge sales with amounts charged to customers' controlling account. Test credits to customers' accounts for cash collections, by comparing such entries in a section of the ledger with the cash book entries. Investigate thoroughly any journal entries credited to accounts receivable; also cash discounts allowed customers. Secure a memorandum of terms from someone in authority and make tests to determine whether rates are correct, also whether discounts have been allowed on collections which were not in accordance with terms.

GENERAL.—Ascertain that only bona fide sales made to outsiders at regular prices have been included in general sales figures. Investigate interdepartmental sales or sales made to affiliated companies as to prices, also as to the possibility that reductions or allowances may be made.

Make certain that sales of discarded machinery or other items not regularly a part of sales are not included in totals representing the regular business. State such sales separately, if possible, and likewise state the profit or loss therefrom as a separate item.

When a department store or a retail establishment having many transactions is under examination, it is not found advisable or practicable as a rule to make detailed verification of even a small part of sales entries. In such cases study closely the system of internal check relative to sales transactions. It will be found that many persons handle the entries so that the likelihood of fraud or gross errors is minimized.

INTEREST.—Verify revenue from interest and dividends. Revenue from interest is derived from two sources, viz., interest on bank balances, deposits, and loans, and interest on investments.

Verify interest on bank balances by an examination of the bank statement and test of the calculations. Note the rate of interest allowed; if lower than that usually allowed, comment on this fact in your report. Verify the rate of interest on other deposits and on loans by inspecting the contract for the loan or deposit. The fact that no interest is credited on a loan or a deposit should not be accepted as conclusive evidence that it was not intended to charge interest in such case.

Interest received on investments should be in accordance with the rate appearing on the bond or note. If no interest has been collected, verify the

fact that there has been a default by examining financial publications or by inquiry made to the proper financial institution. If the securities are coupon bonds, coupons for overdue interest should be found attached to the bonds.

DIVIDENDS.—Verify dividends on stocks as to the rate by inspecting securities for those investments having fixed dividend rates. For other securities make reference to financial publications, or for very inactive items correspond with the company issuing the stock. Dividends credited as to the number of shares should agree with the record of the securities. Be careful to make certain that any dividends earned on securities sold during the year have been credited.

RENTS.—If client receives revenue from rentals of property owned, verify amounts by examining the lease. In some cases leases provide that certain expenses or the cost of certain repairs are to be borne by lessee. Make certain in such cases that expenses of this nature are not being borne by client. Where possible, properties supposed to be vacant should be inspected by the auditor. If not possible to inspect them, try to verify the vacancies by inquiring of some representative of the client who knows about such things. If rentals are handled by an agent, obtain a statement of the balances due, rentals, etc., from the agent.

CASH DISCOUNTS.—Examine discounts received on payments made and ascertain whether maximum discounts are being received and whether all invoices on which discounts can be taken have been paid net.

INCOME FROM AMOUNTS PREVIOUSLY CHARGED OFF.—It may be possible to realize something on many items already charged off if they are properly followed up. Investigate the items charged off and make inquiries as to what is being done about following up those not absolutely bad. If the items are in the hands of attorneys, communicate with them; if not, send out another request for payment or investigate the items if they consist of obsolete or damaged merchandise, supplies, etc., written off.

SPECIAL REVENUE ITEMS.—If special revenue has been collected at any time, ascertain whether further items of the same nature may not be collected.

Expenses

PURPOSE IN VIEW.—The first step in examination of expenses is a study of the system of internal check, because the extent of the examination of the various records depends on the adequacy of the internal check.

The purpose of the examination of entries for expenses, as previously stated, is not to make certain that book entries are correct, but to ascertain whether, as evidenced by the nature and amount of the expenses, the business is being operated efficiently and economically. From experience gained in examination of various enterprises, the auditor is qualified to call attention to those expense items which are unnecessary or the charge for which is excessive. This work will give him a view of the business as a whole not possessed by any executive in the business, so that possible economies through consolidation of departments, purchases, etc., may be apparent to him. On the other hand, the auditor should not go out of his way to look for probable economies of this nature. Such things should come to his notice during the course of his regular work.

While examining the expense entries keep in mind the following:

1. Authorization of the expense by someone in authority.
2. Extent of examination of the voucher before payment.
3. Method of making payment.
4. Correct allocation in the accounts of the expense.
5. Whether the expense was really necessary.

VOUCHERS.—Procedure to be followed in examination of vouchers generally may be found under the caption "The Audit in Progress." Special points in connection with specific expenditures are discussed here.

PURCHASES OF MERCHANDISE AND SUPPLIES.—Make certain that invoices examined cover purchases **for the client delivered to him at his address.** Scrutinize items charged to merchandise purchases to make certain that they represent additions to stock, not expenses.

Many defalcations are covered through payments made to fictitious creditors for items charged to Merchandise account or similar accounts. This is especially true where the payments made for merchandise are charged direct to the account from the cash book. Examine closely any round sum amounts charged in this manner.

Investigate closely invoices for comparatively large purchases of either merchandise or supplies, especially with reference to excess stock. Note for further investigation any remarks on the invoice which indicate that a contract for a large quantity exists or that special terms have been made.

Consider the possibility that duplicate payments may be made, especially where there are many repeat orders with the same concern.

REPAIRS AND RENEWALS.—The principal consideration in the examination of charges of this nature is whether the items represent repairs or renewals, since they may in fact be additions. Study policy of client as to repairs and renewals to determine whether in the long run charges made to expense accounts will not operate to create a secret reserve. Substantial additions which should be capitalized may be erroneously included among expenses. It is conservative accounting to charge items about which there is doubt, to repairs rather than to additions. This does not mean that expenditures which clearly represent additions should be charged to expenses.

Items clearly expenses and in no sense additions may be capitalized, thereby increasing the profits unduly. Insist that such items be included among the expenses.

Ascertain whether competitive bids have been secured for all repairs and renewals of substantial amounts.

When the work in connection with repairs and renewals is done by the client's organization, scrutinize the charges to determine that no profit has been taken on such items and that overhead included is on a proper basis. Such surplus work should hardly be charged with a proportion of administrative expenses.

PAY-ROLLS.—Examination of pay-rolls should commence with a test of additions and deductions to the pay-roll and of the increases in rates. Entries representing such changes for a portion of the period, or for the entire period if the pay-roll is not large, should be compared with employment records or other original data in connection with the employment of help. Test rates paid some of the other employees by comparing with the original records. If pay-rolls are prepared from time cards or time books, make a test verification of the time by comparing the time entered on the

pay-roll with that on the cards or books. Make tests of extensions and footings and verify summaries.

Investigate the method of drawing money for the pay-roll, putting up of pay envelopes or preparation of pay checks, and paying of employees. If possible, attend at the paying of the help. Investigate method of handling unclaimed wages. Ascertain how long pay envelopes or checks which are not called for are kept before being deposited. Investigate method of handing out such envelopes or checks when called for and inspect receipts taken at that time.

Verify distribution of a few pay-rolls. Compare totals of pay-rolls with amounts of cash drawn; if amounts are not identical, make a reconciliation.

Make a comparison of the total of the wages by 3 or 6-month periods as distributed, with corresponding amounts for previous year; the differences should be considered in connection with production figures or volume of business. Investigate abnormal increases or decreases.

SALARIES.—Study changes in the salary list during the period, i.e., additional employees, increases in salaries, and names which have been discontinued. Secure authority for the new employees and for increases of salaries. Make tests of the mathematical accuracy of salary lists and of the summaries prepared. Prove totals of the salary list with cash drawn to pay salaries.

PETTY CASH.—Make a test of petty cash disbursements by examining vouchers for a portion of the period. Note the nature of the expense and the authorization and bring any large or unusual items to the attention of an executive. Summarize some of the vouchers making up a reimbursement check and prove the totals with the records. Investigate totals of vouchers for the entire period, scrutinizing any large amounts. If large items are paid in currency which could as well be paid by check, recommend change of procedure as to these items.

INTEREST AND COLLECTION CHARGES.—Compare vouchers for these charges or entries on the bank statement with entries in records. Make certain that the charges are not excessive. In case of collection charges ascertain whether a saving cannot be effected by making other arrangements for collection of items.

JOURNAL VOUCHERS.—Examine the journal vouchers for the entire period, if not too numerous. For large concerns, examine the vouchers for a portion of the period and scrutinize those for the balance of the period. Investigate the vouchers which cover charges to expense accounts, to profit and loss accounts, or to the reserves, as it is possible to cover irregularities through the medium of such entries. Entries of this nature should be approved by someone in authority.

COMMISSION TO SALESMEN, ETC.—Examine contracts or agreements with the salesmen, etc., and note any special terms. Verify commissions paid or credited with reference to special terms. Make certain that it is not intended to deduct uncollectible accounts from total sales before arriving at amount of commission paid on sales.

TRAVELING EXPENSE.—Examination of these vouchers, in addition to the scrutiny of the approvals and distribution, should include a query as to whether the amounts charged are reasonable.

INSURANCE.—Make a thorough examination of bills for insurance premiums. Consider the rates and investigate the amount of return premiums

credited. If there are many cancellations and the return premiums are received net of the brokers' commission, consider the question of having the broker pay gross or of the client taking out shorter term policies.

FREIGHT AND EXPRESS.—An audit of the freight bills which would cover the authorizations, the distributions of the charges, and the verification of the fact that the payment had been made correctly, would not be complete. Make certain that freight which is paid by client is not charged to shipper. If a purchase is made f.o.b. destination, the freight should be paid by or charged to shipper. As a matter of convenience the shipper in many cases arranges for the payment to be made at destination, with the intention that the freight will be deducted from amount of his invoice. It is possible in such case that the receiver of the goods may charge such a freight payment with others for merchandise billed f.o.b. shipping point to a freight account or to a purchase account, instead of charging the freight to the shipper. Compare some of the freight bills with the invoices of the shippers to make certain that no loss is being sustained through neglect to deduct freight charges from purchase invoices.

MISCELLANEOUS EXPENSES.—Audit of miscellaneous expenses, which include charges for services, special supplies, etc., requires consideration on the auditor's part, among other things, of the necessity for such expenses. This class of items is more likely to be omitted from the records because the expenses as a rule are not incurred periodically but only now and then. Bills for legal services, for instance, are generally received long after the services are rendered; there is a likelihood that such an item may be omitted from the liabilities if the auditor does not insist on the production of the invoice. It is important that such bills be seen, since they may furnish information relative to contingent or other liabilities not recorded elsewhere. Other bills for special services may cover instalment payments on long-term contracts. Determine whether the balances due on such contracts should not be included among the liabilities, since it may be possible that all benefits from the arrangement have been received prior to the date of the balance sheet.

General

In addition to the verification of assets and liabilities and examination of the income accounts, examine into general business policies to make certain that all the client's interests are protected.

INSURANCE.—Make certain that the amount of fire insurance carried is adequate, also that the lines carried over the year are not excessive. Examine the coinsurance clause in the policy and consider its effect on the insurance carried.

There are many special forms of insurance which may be carried to advantage by the client, such as use and occupancy, burglar, employees' liability, insurance on the lives of the officers payable to the concern, etc. Keep these in mind, and where advisable to carry some of these special forms of insurance bring the subject to client's attention. Consider the question of bonding all employees directly or indirectly connected with the handling of cash.

RECEIVING AND SHIPPING RECORDS.—Make an examination of receiving and shipping records to determine whether methods followed are such that goods are likely to be shipped without a record being made. Consider the nature of the entries made and their value as a check on the billing

records. Examine the receiving records in same manner, and trace the movements of merchandise after its receipt and until goods are consumed or shipped out, so as to be reasonably certain that the possibility of merchandise being misappropriated is remote or that any weak links in the chain have been located.

AUDIT FEE.—Consider this question before the audit commences. Make definite arrangements as to scope of the work and amount of the fee before the start. Otherwise you may make a bad impression by bringing up questions during the course of the audit about the work to be done and changes in the fee because of so-called special work. If a definite amount has been fixed for the work and the scope of the audit in a general way is apparently understood by the client, any additional work which obviously could not be provided for when the engagement was made, should be undertaken only after an understanding with the client.

Where possible, encourage the client to have work done on a **per diem basis,** an approximate amount being named for cost of the work. **Fixed fees** are generally unsatisfactory because it may be necessary to do considerably more work than first appearances indicated or the auditor may be tempted to make as large a profit as possible by "cutting corners."

MINUTE BOOK.—An audit is not complete without examination of the entries in the minutes of the directors' and stockholders' meetings. Make notations of dividends declared, salary increases, special contracts, loans, and any items covering transactions which you are supposed to verify during the course of the audit.

TRANSACTIONS SUBSEQUENT TO PERIOD UNDER REVIEW.—While an examination is restricted in a sense to transactions during the period under review, you should note any unusual transactions recorded subsequent thereto which may materially affect the financial condition after the balance sheet date. Give serious consideration to the advisability of making a notation on the balance sheet of the effect of such a change. In any event, if the balance sheet is made for creditors or for bankers, communicate the condition in question to them.

LIENS AND HYPOTHECATIONS.—Make inquiries to satisfy yourself that there are no liens on any of the assets or that they are not hypothecated. If there are liens against some of the assets, state such items separately and indicate the fact that they are not free on the balance sheet.

FRAUD.—It is not good policy to have in mind constantly the idea that you will uncover fraudulent entries. Your work should be done in such manner that if any fraud exists in transactions recorded in several months or more, it will be brought to light. When you discover items which apparently represent fraudulent entries, do not be too quick to accuse the one who appears to be guilty. Ask such party in the presence of his superior to explain the entries and give the defaulter an opportunity to confess.

BRANCH HOUSE ACCOUNTS.—If making an examination at a branch office, as well as at the head office, follow same procedure at branch as to verification of assets, liabilities, earnings, and expenses as at head office. Make a reconciliation of the inter-office accounts between the branch office and head office and verify the open items in such reconciliation.

When no examination is made of the accounts at the branch office, if branch is small and one not visited by staff auditors and not controlled by a good system of internal check, request a statement of the details of each

asset and liability account in the branch office books, as well as a transcript of the transactions recorded in the head office account during the last month or two. Study this statement closely in connection with entries found in head office books. If there is a large inventory at branch, the local representative should furnish some data relative to the old, damaged, or obsolete stock. If the branch in question is large and well controlled by head office, critical examination of reports received and an investigation of the system of internal check should enable one to determine whether assets and liabilities are correct. In any event examine a detailed statement of the cash balance.

SECTION 15

STATISTICS AND GRAPHICS

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 15

STATISTICS AND GRAPHICS*

The Statistical Method

DEFINITION.—By the statistical method is meant the interpretation of masses of data by means of processes of summarization. These processes of summarization reduce the significance of such masses of data to an intelligible basis. When studied by the statistical method, large numbers which in themselves are meaningless, are usually found to obey certain laws and so may be employed as a basis for the determination of policies.

Statistical method formulates rules of procedure in the handling of large groups of numerical data.

Applied statistics treat of the application of the rules of procedure formulated by statistical methods to concrete problems.

The **methodologist** is frequently primarily a mathematician. There are, however, certain methods which involve little or no mathematical consideration. The specialist in applied statistics may be an accountant, economist, biologist, census expert, or a state official. He applies the methods formulated by the methodologist to the problems which fall within his field.

Descriptive statistics consist of the records as ordinarily found in the volumes published by the census bureau, other governmental departments, and by private agencies. These may be studied with some degree of profit without the application of scientific methods of analysis.

Scientific statistics apply the rules and methods formulated by the methodologist to the concrete data furnished by **descriptive statistics** to secure interpretations of that data which cannot be had from mere observation.

RELATION OF STATISTICS TO ACCOUNTING.—Accounting records are the source of valuable statistical data, but this data should not be regarded as being statistical until properly classified and tabulated. From the accounting point of view figures are usually regarded individually; from the statistical point of view they are regarded collectively. Much accounting data can be usefully interpreted by means of statistical processes. Valuable comparisons can be made not only of data relative to internal conditions, but by collecting data from representative establishments progress can be made in the standardization of methods of procedure It is in this direction that much remains to be done. Various manufacturing and trading processes are subject to statistical control. Much of the original data which must be secured in order to apply statistical methods of comparison can be derived from accounting records. As yet statistics have not become as familiar to the average business man as has accounting, but nearly

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all large concerns have established statistical departments. These departments, if properly run, add to the value of the work performed by the accounting departments by making useful interpretations of the data which the accounting department is able to supply. Many accountants do not realize to what degree the material supplied by their records is subject to statistical interpretation. Every accountant should familiarize himself with the fundamental principles of statistical and graphic representation. He will find place for their use in the construction of his reports and statements.

STATISTICAL METHOD.—Statistical method comprehends all analytical and synthetical processes by means of which the statistician is enabled to explain the fundamental significance of groups of statistical data. This subject is considered in this section from two points of view, viz., (1) method itself, and (2) the field of application of statistical method. Professor Secrist gives the following outline of the application of statistics to business problems:

1. Application within business units.
   - (a) Analysis of sales and sales possibilities by districts, by periods, by products, etc.
   - (b) Analysis of production by departments, processes, etc.
   - (c) Analysis of employment as to rapidity of turnover, scale of payment, labor supply, welfare work, etc.
   - (d) Analysis of production and factory organization.
   - (e) Etc.
2. Application without and between business units, affecting:
   - (a) Consumption
     - (1) Family budgets.
     - (2) Price phenomena.
     - (3) Etc.
   - (b) Production
     - (1) Capital and labor employed, the absolute amounts and proportions.
     - (2) Expenses incurred and their distribution.
     - (3) Materials used—amounts and values, and their distribution.
     - (4) Products created—amounts and values, and their distribution.
     - (5) Etc.
   - (c) Exchange
     - (1) Prices—wholesale and retail.
     - (2) Sales—number and amounts involved.
     - (3) Crises—financial and industrial.
     - (4) Failures—financial, commercial, and industrial.
     - (5) Etc.
   - (d) Distribution
     - (1) Rents.
     - (2) Wages and methods of payments, real and nominal wages, etc.
     - (3) Profits—competitive and monopoly.
     - (4) Interest rates.
     - (5) Etc.
3. Application to governmental distribution and policy.
   - (a) The determination of the benevolent or malevolent effects of a given state policy.
   - (b) The determination of "fair values" and "reasonable returns" as bases for the exercise of administrative discrimination and the shaping of governmental policy.

(c) The supervision of private business methods, looking toward the insuring of competition, the regulation of monopoly, the guaranteeing of favorable conditions of employment, etc.
(d) The evaluation of properties as a basis for taxation, condemnation, and forced sales, etc.
(e) The recording of domestic and foreign trade movements, estimating national wealth and its distribution, recording national progress so far as revealed statistically.

STATISTICAL UNITS.—Statistical units are of two kinds, viz., **units of enumeration** and **units of exposition.** Statistical units are both quantitative and numerical in character, i.e., quantity in reference to a unit is always expressed numerically. Illustrations of units of enumeration are: inch, foot, meter, gallon, bushel, ton, mile, ton-mile. Units of this type are definite and fixed, but frequently it is necessary to define and limit the unit of enumeration employed with great care. Thus, in enumerating all trading establishments in a given territory it is first necessary to define what is meant by the unit of enumeration—trading establishments. This depends to some extent upon the purpose in view. Thus, the purpose may be to ascertain the number of trading establishments independently owned. If so, certain conditions govern. Or it may be to ascertain the number independently managed, in which case other conditions govern. Purpose determines the definition of units of enumeration, except in case of those of simple linear or quantitative measurements. The work of defining statistical units of enumeration of the more complex type is a problem in analysis and limitation. Thus, if we wish to define **accident** for purpose of workmen's compensation it is necessary first to analyze the law governing workmen's compensation in the given jurisdiction and then limit the application of the unit accordingly. Accurate definition of statistical units must precede any attempt at collection of data.

Units of enumeration are **simple** and **composite.** Simple units are those which are unqualified. Examples: horse, boat, farm, building. Composite units are those which are qualified. Examples: black horse, steamboat, dairy farm, brick building. The process of limitation as applied to units of enumeration is dependent entirely upon the purpose of the enumeration.

Units of exposition are employed to **interpret** data collected in accordance with units of enumeration; also to **present** the results of such interpretation in the best form possible. Interpretation means comparison. Data which are numerated according to certain units must be used to make comparisons to be of value. Thus, we wish to know not only the number of a given article sold in a given state, but we have a basis for comparison with other states if we know the sales per 1,000 population. If it is 100 per 1,000 inhabitants in a given state, then the coefficient is .1. This can be compared with similar coefficients for other states. If the article is one which appeals only to a given class of persons, the sales must be related only to the number comprising that class. This produces a **corrected coefficient.** This is illustrative of Quetelet's dictum: "Never compare data which have nothing in common." Differences in time and space may make comparisons useless.

Coefficients, when regarded from the point of view of practical usefulness, make necessary a consideration of **units of presentation.** Comparison must be such as will give effective representative results. Little good is secured from coefficients derived from data taken from such large areas that variations in conditions within such areas are hidden. Coefficients

derived from non-homogeneous data are meaningless. For many purposes the average per-capita sales of tobacco per annum in the United States is meaningless because it is based on total population instead of on the number of persons using tobacco. The per-capita sales for tobacco users by states would be a step nearer to a corrected coefficient of presentation.

Illustration.—A study is to be made of operating expenses of grocery stores. It is necessary to define what is meant by the unit—grocery store; also what is meant by operating expenses. Having properly limited the use of the expression "grocery store" so that the one assigned to collect primary data can exclude all stores not coming within the field as thus circumscribed, it is next necessary to secure a classification of operating expenses typical of the grocery business. It thus becomes necessary to define each item of operating expense, the extent to which division of operating expense is carried being subordinate to the object in view in making the investigation. Having thus defined all statistical units and having secured data in accordance therewith from a wide area, it is apparent that for purposes of comparison the coefficients expressed as rates of the various items of operating expense to net sales are not corrected coefficients if based on average results for the entire country. Two steps are necessary to secure corrected coefficients: (1) classifications on a geographical basis in order that variations resulting from geographical position may be brought out, and (2) classification on basis of capitalization in order that variation resulting from differences in size of undertaking may be brought out. When this is done, corrected coefficients are secured and these may be employed for making intelligent comparisons between grocery stores of various capitalizations and between grocery stores having different geographical locations.

Statistical Classification

DEFINITION.—Statistical classification consists in the arrangement of statistical data to facilitate its uses for purposes of interpretation and comparison.

TABULATION.—Tabulation is based on classification. Classification is the basis of orderly thinking, and consists in arranging statistical data into

Table 1. Condensed Statement of Manufacturing Costs

	Year 1922		Year 1923	
	Dollars	% of Total	Dollars	% of Total
Raw Materials	$ 320,000	31.07	$287,600	37.06
Direct Labor	441,500	42.86	301,300	38.83
Manufacturing Expense	268,500	26.07	187,100	24.11
Total	$1,030,000	100.00	$776,000	100.00

groups in accordance with the character of the data. After classification, tabulation consists in arranging data thus classified in form of tables. Tables are arranged as flat surfaces containing classified data which may be read from either of two starting points, viz., (1) the stub, which shows the basis of horizontal classification, or (2) the caption, which shows the basis of vertical classification. Tables possess the advantages which classified data possess over unclassified data. These may be summarized as, regularity, comparability, compactness, legibility. Table 1 is one of the first order, that is, one in which all of the details are classified according to certain common characteristics.

Certain conditions control method and arrangement in tabulation. One factor, frequently, is time, in which case the arrangement is chronological. Other arrangements are based on geographical location, magnitude, and the alphabet. In the above table time is the controlling factor, vertically, but it is doubtful whether any factor was consciously employed in determining the horizontal position because of the fewness of the items. In Table 2 time is the controlling factor in horizontal arrangement.

Table 2. Schedule of Accumulation—Bond Payable May 1, 1923

Date	Total Interest 3%	Net Income 4%	Accumulation	Book Value	Par
1918, May 1.....	....	....	....	$ 95,508.71	$100,000.00
Nov. 1.....	$ 1,500.00	$ 1,910.17	$ 410.17	95,918.88	
1919, May 1.....	1,500.00	1,918.38	418.38	96,337.26	
Nov. 1.....	1,500.00	1,926.74	426.74	96,764.00	
1920, May 1.....	1,500.00	1,935.28	435.28	97,199.28	
Nov. 1.....	1,500.00	1,943.99	443.99	97,643.27	
1921, May 1.....	1,500.00	1,952.87	452.87	98,096.14	
Nov. 1.....	1,500.00	1,961.92	461.92	98,558.06	
1922, May 1.....	1,500.00	1,971.16	471.16	99,029.22	
Nov. 1.....	1,500.00	1,980.58	480.58	99,509.80	
1923, May 1.....	1,500.00	1,990.20	490.20	100,000.00	
	$15,000.00	$19,491.29	$4,491.29		

Where geographical distribution is considered in the United States Census Reports, the order of arrangement usually is as follows: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, Pacific.

Arrangement must always be considered as a function of purpose and should be varied when the purpose changes if a more effective presentation can be secured.

Material should not be allowed to take tabular form without first being subjected to careful examination to determine the relationship of the different parts. An inspection of Table 2 above will make this clear.

PREPARATION OF DATA.—After preliminary classifications are determined upon, statistical data are usually gathered in the form of schedules and are transferred to tabular forms. Sometimes intermediary processes are necessary. Since the first principle of tabulation is classification, it is

necessary to arrive at a correct basis of classification before tabulation is begun. The data is to be divided into certain classes and these must be segregated for the purpose of arriving at totals. For this purpose tabulation cards are used. The data is transferred to the cards in accordance with the nomenclature adopted, each card representing a given class or group of data. For convenience symbols are sometimes used in place of words in describing given classes of data. If the amount of data to be tabulated is large, mechanical tabulating machines may be used. The Hollerith and Powers machines are both widely used. After the data are transferred to cards, these must be sorted according to the classification determined upon as the basis of classification. This may be done mechanically where statistical machines are used, although cards punched mechanically may be sorted by hand. Ordinarily there will be as many groups of cards as there are groups to be tabulated. Each group may be sorted into as many subgroups as desirable. The next process is counting, to determine the number in each group and subgroup. Where large numbers must be counted a listing machine should be used.

TECHNIQUE OF TABULATION.—The technique of tabular forms is a function of the information to be presented. It may be desirable to present one or more facts regarding a given class of data, and ordinarily the number of facts to be presented determines the construction of the table. In Table 3 are tabulated the amounts shown for cash in the annual balance sheets of the American Bank Note Co. for the years 1917-1921, inclusive.

Table 3. Cash of American Bank Note Co., by Years

Year	Amount of Cash
1917	$ 697,372
18	588,012
19	1,919,447
20	1,276,652
21	1,759,929

In Table 4 are shown the amounts of the assets of the American Bank Note Co. for the years 1917-1920, inclusive.

This arrangement may be reversed, the years being placed at the top and the asset captions at the side, in which case the arrangement is that of a comparative balance sheet. The **form to be adopted** is the one which best brings out the relationships which it is desired to emphasize. In addition, certain other considerations of general character must be allowed for. One is the **physical limitation** of the printed page. An arrangement which crowds either dimension of the page should be avoided. Where totals are to be shown, their position must be carefully considered. Until recently it has been customary to show these at the bottom of the page, but it has now become the frequent practice to show them at the top as in Table 5. This places the totals in the most conspicuous position, which is their proper place if it is desired to emphasize them.

Table 4. Assets of American Bank Note Co., by Years

Year	Real Estate	Materials and Supplies	Accounts Receivable	Notes Receivable	Marketable Investments	Contract Deposits	Special Deposits	Cash	Deferred Charges
1917..	$8,555,294	$1,431,507	$1,058,500	$1,601	$ 268,600	$55,595	$121,092	$ 697,372	$60,233
18..	8,652,111	2,400,050	1,134,630	367	189,307	55,520	128,457	588,012	32,957
19..	8,002,617	2,438,704	2,187,412	....	418,690	55,720	140,549	1,919,447	21,917
20..	8,853,020	2,953,950	2,105,800	....	1,608,950	55,520	....	1,267,652	12,503

Table 5. Number of Real Estate Mortgages in Kentucky, by Years

Year	Number of Real Estate Mortgages in Kentucky		
	Total	Taxable	Non-Taxable
Total.........	....	....	....
1915.............			
16.............			
17.............			
18.............			
——.............			
——.............			

Great care should be exercised in formulating the titles of statistical tables. While they should be brief, they should state clearly what the contents are. Improperly worded and arranged titles are a frequent cause of failure in presenting useful data.

The **nature of the data** to be tabulated must be taken into consideration in determining the form of table to employ. In case of historical data time is a controlling consideration and must dominate the arrangement. Where data give a cross-sectional view as at a given time, the factor of time may be ignored except in the title. In preceding illustrations time is a controlling factor. In Table 6, showing the range of prices of certain stocks on the New York Stock Exchange on Sept. 21, 1922, time is not a controlling factor in determining tabular arrangement. Here alphabetical arrangement controls horizontally, while order of sales controls vertically. In a sense, time is a factor, since the "open" price occurs first and the "close" price last, but this is not true of the "high" and "low" prices.

Table 6. High, Low, and Closing Prices of Eight Industrial Stocks on the New York Stock Exchange on Sept. 28, 1922

Name of Stock	Open	High	Low	Close
American Locomotive......	124	$124\frac{7}{8}$	$121\frac{1}{2}$	$121\frac{1}{2}$
Beech-Nut Packing........	$43\frac{1}{2}$	$44\frac{1}{2}$	$42\frac{5}{8}$	$43\frac{3}{4}$
Continental Can...........	$87\frac{1}{2}$	88	86	86
Hudson Motors............	$22\frac{1}{8}$	$22\frac{1}{8}$	22	22
Marin Rockwell...........	17	17	17	17
Moon Motors.............	$16\frac{3}{4}$	$16\frac{3}{4}$	$15\frac{1}{8}$	$15\frac{1}{8}$
Standard Oil of California..	115	$116\frac{1}{2}$	$114\frac{1}{4}$	$114\frac{1}{4}$
U. S. Steel................	$104\frac{1}{4}$	$104\frac{1}{2}$	103	$103\frac{1}{8}$

Another type of data is that which expresses variations at a single point in time. This kind of data is usually formed into groups of equal width. It is illustrated in Table 7, reproduced from Secrist's "An Introduction to Statistical Methods" (p. 146), showing classified weekly wages for employees for all manufacturing industries in Massachusetts in 1912.

Table 7. Classified Weekly Wages for Employees in All Manufacturing Industries in Massachusetts in 1912

Wage Groups	Number and Per Cent of Employees Receiving Specified Amounts	
	Number	Per Cent
Total	681,383	100.00
Under $3 per week	2,266	0.3
$ 3 but under $ 4	5,792	0.9
4 " " 5	16,909	2.5
5 " " 6	34,070	5.0
6 " " 7	52,604	7.7
7 " " 8	63,879	9.4
8 " " 9	68,787	10.1
9 " " 10	75,006	11.0
10 " " 12	103,160	15.1
12 " " 15	107,677	15.8
15 " " 20	104,585	15.3
20 " " 25	32,536	4.8
25 and over	14,112	2.1

In this table the width of groups varies from $1 to $5, while in the last group no upper limit is given. Care should be used in varying the width of groups because wrong conclusions are liable to be drawn in comparing groups of unequal width.

Averages

FUNCTION AND LIMITATION OF AVERAGES.—To interpret large masses of data it is necessary to secure certain brief summaries which, while not presenting all the information which may be secured from the original data, do bring out the fundamental tendencies which underlie it and which a casual inspection of the data does not ordinarily make evident. The purpose of averages is to interpret the tendencies hidden under great masses of figures. In making this interpretation, details must be neglected because it is the essential purpose of averages to avoid details. The process of finding

and using averages is a process of interpretation. In employing averages as short-cuts to an understanding of statistical data, care must be used not to make a wrong interpretation. Purely mechancial construction of averages unaided by judgment and the process of elimination of material which serves to obscure real tendencies is apt to lead to erroneous results. Averages are frequently fictitious, in that they may not be representative of any actual existing thing. They are representative of types which do not necessarily have actually existing counterparts.

Such generalized expressions necessarily possess limitations as to usefulness. Sometimes their employment indicates neglect or a willingness to forego a more searching inquiry. They must be used with judgment and caution. On the other hand, where detail may be neglected, averages oftentimes give an accurate picture of tendencies.

THE ARITHMETIC AVERAGE.—This is the average most widely used. It is described as being the center of gravity of a statistical series. To secure it, all items in a given series must be considered. It is a mathematical concept and may have no actually existing counterpart. The average of two entirely different series may be the same. The average of 7, 6, 5, 3, 2, 1, is 4. The average of 1, 3, 8, is also 4. The arithmetic average ignores the character of the distribution within the series. It should be used with great care because it is of a highly abstract character. In the absence of bias, i.e., where the members of a series are determined by chance, the arithmetic mean approximates more nearly the true value as the number of members or items in the series is increased. Series of this type are infrequent in economics and business because data on wages, sales, purchases, and so on are not determined purely by chance.

COMPUTATION OF ARITHMETIC AVERAGE.—The arithmetic average is secured by totaling the items in a series and dividing their sum by

Table 8. Prices of Suits, Number of Each Sold in a Given Period, and Products of Prices and Numbers

(1) Prices Suits	(2) Number of Each Suit Sold	(3) Products of Prices and Numbers
Total	422	$11,993
$15.00	47	$ 705
16.50	36	594
18.00	53	954
22.50	80	1,800
30.00	60	1,800
33.00	30	990
36.00	25	900
45.00	60	2,700
50.00	31	1,550

the number of items. In this connection, however, it is necessary to consider the subject of **weighting.** The importance of items in a series is sometimes affected by the frequency with which they occur. When each item occurs but once, the question of weighting does not arise because due allowance is made for each occurrence when the average is found according to the rule stated above. When the various items of a series have various frequencies, it is necessary to take these frequencies into account in securing a true or weighted average. In column 1 of Table 8 are shown the prices of the various kinds of suits of clothes sold in a clothing store; in column 2 are shown the number of each kind sold during a given period; in column 3 are shown the products of the prices of each kind of suit multiplied by the number sold.

The weighted average price per suit sold is secured by dividing $11,993 by the total number sold, 422, which gives $28.42. The simple average of prices of suits secured by dividing the total of the amounts in column 1, by the number of items in the column, is $29.56. In this illustration the numbers in column 2 were selected by chance, which accounts for the fact that the simple average and weighted average are of nearly the same amount. Care must be taken in the selection of weights and it may be well to make tests with and without weights to determine to what extent the weighted average differs from the simple average. When the items to be weighted are arranged miscellaneously, it is surprising to find how little various systems of weights affect the average. In Table 9 the items shown in column 1 in Table 8 are arranged by chance. In the columns which follow various systems of weights are applied. The weighted averages secured by the application of these systems are shown below the table.

Table 9. Prices of Suits and Systems of Weights Used to Secure a Weighted Average Price Per Suit

Prices of Suits	Systems of Weights					
	Numerals 1-9	Products of Prices and Numbers	Numerals 9-1	Products of Prices and Numbers	No. Words in Consecutive Lines in a Book	Products of Prices and Numbers
Total....	45	$1,447.50	45	$1,212.50	82	$2,351.00
$16.50.......	1	$ 16.50	9	$148.50	7	$115.50
18.00.......	2	36.00	8	144.00	9	162.00
50.00.......	3	150.00	7	350.00	9	450.00
30.00.......	4	120.00	6	180.00	8	240.00
15.00.......	5	75.00	5	75.00	12	180.00
22.50.......	6	135.00	4	90.00	7	87.50
33.00.......	7	231.00	3	99.00	12	396.00
45.00.......	8	360.00	2	90.00	8	360.00
36.00.......	9	324.00	1	36.00	10	360.00

Average price when weighted with numerals 1-9 is 1,447.50 ÷ 45 = $32.17.
Average price when weighted with numerals 9-1 is 1,212.50 ÷ 45 = $26.94.

Average price when weighted with number of words in consecutive lines in a book is 2,351 ÷ 82 = \$28.65.

The average prices, secured by using various systems of weights, differ, respectively, by \$3.75, \$1.48, and \$0.23, from the average secured when the weights used were the numbers of suits sold. Weighted averages frequently vary so little from simple averages that it is desirable to consider carefully he advisability of using weights.

SHORT-CUT METHOD OF COMPUTING ARITHMETIC AVERAGE.—Sometimes the arithmetic average can be computed to advantage by assuming an average and then calculating the plus and minus deviations from this assumed average. The algebraic sum of these deviations represents the difference, plus or minus, as the case may be, betwen the assumed average and the true average, because the algebraic sum of the deviations from the true arithmetic average is 0. In case of a frequency series it is necessary to multiply the deviation in each instance by the numbers of frequencies. Using data in Table 8, results by this method are as shown in Table 10.

Table 10. Method of Computing Arithmetic Mean by Use of an Assumed Average

(Average price assumed is \$30)

Prices of Suits	Number of Each Suit Sold	Deviation of Price from Assumed Average		Deviation Multiplied by Frequencies		Algebraic Sum of Deviations
		−	+	−	+	
Total....	422			\$2,427.00	\$1,760.00	−\$667.00
\$15.00.......	47	\$15.00		\$705.00		
16.50.......	36	13.50		486.00		
18.00.......	53	12.00		636.00		
22.50.......	80	7.50		600.00		
30.00.......	60					
33.00.......	30		\$ 3.00		\$ 90.00	
36.00.......	25		6.00		150.00	
45.00.......	60		15.00		900.00	
50.00.......	31		20.00		620.00	

−667 ÷ 422 = −1.58, the amount by which the assumed average must be reduced to secure the true average. \$30, the assumed average, minus \$1.58 = \$28.42, the true average.

In the case of statistical series consisting of **frequency groups** the number of items falling within the limits of each group is given but the arrangement within the group is not known. It is therefore necessary to assume an even distribution within the group and to multiply the frequencies by the middle terms of each group. In Table 11, column 1 shows wage groups, column 2 shows the frequencies in each group, column 3 shows the products of frequencies and middle term of each group, column 4 shows the plus and minus deviations from an assumed average wage of \$8.50, column 5 shows the products of these deviations and the frequencies, and column 6 shows the algebraic sum of these products.

Table 11. Wage groups, Frequencies in Each Group, and Data for Determination of the Arithmetic Average

(1) Wage Groups	(2) Frequencies in Each Wage Group	(3) Products of Frequencies and Middle Terms of Each Group	(4) Deviations from Assumed Average of $8.50		(5) Products of Deviations and Frequencies		(6) Algebraic Sum of Deviations
			−	+	−	+	
Total	359	$2,512.50			$665.00	$126.00	− $539.00
$ 2.00 to $ 2.99	12	$ 30.00	6		$ 72.00		
3.00 " 3.99	15	52.50	5		75.00		
4.00 " 4.99	30	135.00	4		120.00		
5.00 " 5.99	70	385.00	3		210.00		
6.00 " 6.99	65	422.50	2		130.00		
7.00 " 7.99	58	435.00	1		58.00		
8.00 " 8.99	41	348.50					
9.00 " 9.99	30	285.00		1		$30.00	
10.00 " 10.99	22	231.00		2		44.00	
11.00 " 11.99	12	138.00		3		36.00	
12.00 " 12.99	4	50.00		4		16.00	

This table illustrates two methods of finding the average in a group frequency series. One method is to divide the total of the products of the frequencies and middle terms of each group, \$2,592.50, by 359, the total frequencies, which gives as a quotient and the average, \$7. The other method is to divide \$539.00 (the algebraic sum of the products of deviations from an assumed average and the frequencies) by 359 (the frequencies) which gives +\$1.50 (the excess of the assumed average, \$8.50, over the true average). Therefore, the true average is \$8.50 − \$1.50 = \$7.00.

THE MODE.—The mode is the typical item in a statistical series. It is never an abstract concept because it is always represented. It is always real. This does not mean that a mode exists in every series. In this connection it is desirable to distinguish between **discrete** and **continuous** statistical series. Discrete statistical series are those which show breaks in continuity which no amount of data will serve to eradicate. Thus, a table showing interest rates on mortgages will show percentage of 3%, 3½%, 4%, 4½%, 5%, 5½%, 6%, 6½%, and so on; but no matter how much material is collected there will always exist breaks of ½%. Continuous statistical series are those which show breaks merely because of the limited amount of data available. The character of the data in continuous series is such that breaks disappear as an increasing amount of data is made available. Thus, a table showing lengths of oak leaves shows breaks between lengths because of the limited number of leaves measured. The breaks decrease as the number of leaves measured increases.

Frequently the mode can be located with much greater certainty in case of continuous series than in case of discrete series. Many of the series with which the accountant deals are of the discrete type, although in some cases the unit of measurement is so small that the series, for practical purposes, approximates the continuous. In case of group frequency series, the wider the groups are made, the more the individual data are submerged, hence the greater the difficulty of locating the true mode. If the series is a continuous one, the mode may be located within a group by interpolation. The method of interpolation must be employed with caution in case of discrete series, however.

Locating the Mode.—The location of the mode in both historical and frequency series is a matter of inspection. The process of inspection is facilitated by tabular arrangements which visualize the modal groups. The mode may also be located graphically. Sometimes more than one mode is found in a given frequency distribution. Table 12 is taken from Secrist's "An Introduction to Statistical Methods" (p. 273), and illustrates the method of approximating the mode in a historical series.

In column 2 the group limits are fixed at 5 million, beginning at 45 million; in column 3 the group limits are fixed at 10 million, beginning at 40 million; in column 4 the group limits are fixed at 10 million, beginning at 45 million; in column 5 the group limits are fixed at 15 million, beginning at 45 million; and in column 6 the group limits are fixed at 8 million, beginning at 46 million. Secrist says: "The most characteristic amount with a 10-million group is 46 to 56 millions, of which there are 7 instances; more narrowly there are 5 years in which the amounts imported are between 49 and 56 million. It is probably not wise to locate the mode more accurately than in the group 46 to 54 million (column 6). To do so for this type of distribution would be to strive for too great accuracy."

In frequency series the mode occurs in the group of maximum frequency. It is located by interpolation, proper weight being given to the frequencies

Table 12. Data Showing Importation of Raw Cotton Into the United States, Arranged so as to Determine the Modal Amount

Year	Amounts in 000's	Frequencies					
			Approximate by Groups				
		(1) Identical	(2) 5 Mil. beginning at 45 Mil.	(3) 10 Mil. beginning at 40 Mil.	(4) 10 Mil. beginning at 45 Mil.	(5) 15 Mil. beginning at 45 Mil.	(6) 8 Mil. beginning at 46 Mil.
1901....	46,631	1					
1904....	48,841	1	3	3			
1895....	49,332	1					
1899....	50,158	1			6		6
1897....	51,899	1	3	4		7	
1898....	52,660	1					
1896....	55,350	1	1		2		2
1905....	60,509	1	1	2			
1900....	67,398	1	1				1
1906....	70,964	1				5	
1908....	71,073	1	3	3	4		3
1903....	74,874	1					
1910....	86,037	1	2	2	2	2	2
1909....	86,518	1					
1902....	98,716	1	1	1	2	2	1
1907....	104,792	1	1	2			2
1912....	109,780	1	1		2	2	
1911....	113,768	1	1	1			1
1913....	121,852	1	1	1	1	1	1

in the groups on either side of the group of maximum frequency. In Table 11 (p. 720), which for practical purposes is a series of the continuous type, 70 is the group of maximum frequency. In the next lower group are 30 and in the next higher group are 65. There are 95 in the two groups. The width of groups is \$1.00. 30/95 of \$1.00 = \$0.32. 65/95 of \$1.00 = \$0.68. The mode, theoretically, is \$5.68, because the tendency of the 65 items in the group above is to place it at \$0.68 above \$5.00, while the tendency of 30 items in the group below is to place it at \$0.32 below \$6.00.

By plotting frequency data the mode may be located. In a simple graph the mode is the maximum ordinate. In cumulative graphs, or ogives, the mode occurs where the curve approaches most nearly to the vertical. The data in Table 11 are shown plotted in Fig. 1 in the form of a **simple graph** and in the form of an **ogive.** The plotting points used are the mid-points of the wage groups, \$2.50, \$3.50, and so on.

THE MEDIAN.—The median is the middle item in a series the members of which are arranged in the order of magnitude. If the number of items is odd, the median exists in the series; if even, the median is non-existent,

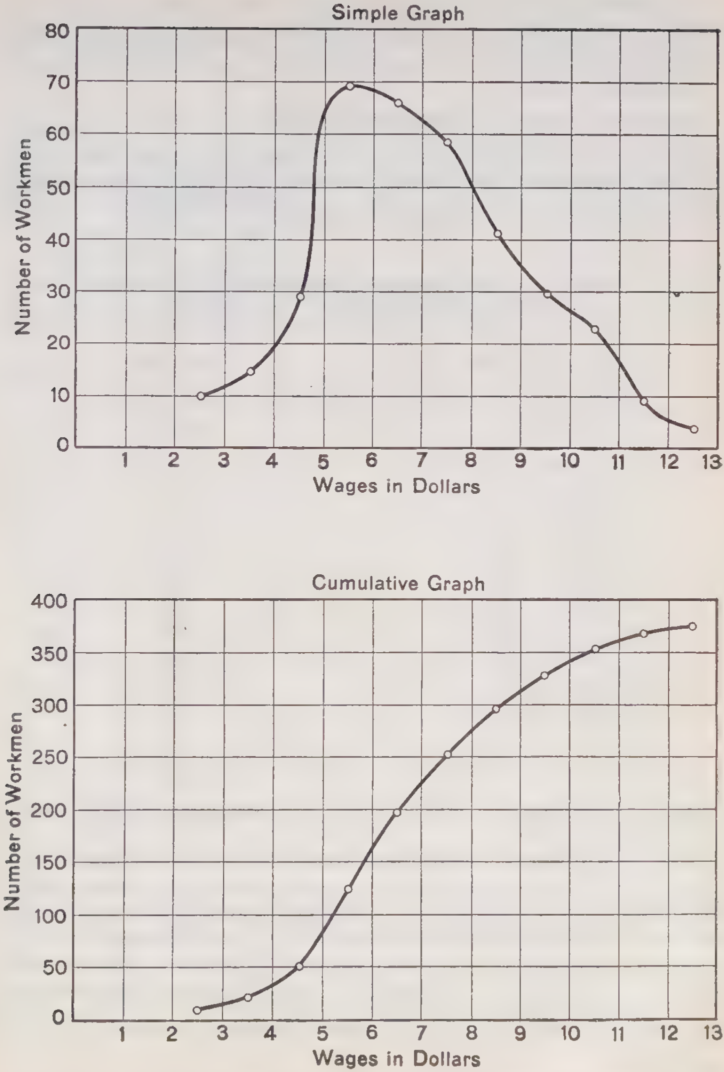

Fig. 1. Curves of Simple Graphic and Ogive (Based on Table 11)

but theoretically lies between the two middle items. Like the mode, the median is not a mathematical concept; but unlike the mode, it is sometimes non-existent. The median may or may not be a good representative of the series in which it is found. In general, it is useful only when the distribution of the series is uniform.

Locating the Median.—In locating the median, distinguish between discrete and continuous series. Great accuracy is not to be expected in discrete series. In group frequency series it is necessary to locate first the median group, then the median within that group. For this purpose, assume a uniform distribution within the group. Using the data given in Table 11 (p. 720) we have the figures given in Table 13.

Table 13. Wage Groups and Frequencies in Each Group, for Determination of the Median

Wage Groups	Frequencies
Total	359
\$2.00 to \$2.99	12
3.00 " 3.99	15
4.00 " 4.99	30
5.00 " 5.99	70
6.00 " 6.99	65
7.00 " 7.99	58
8.00 " 8.99	41
9.00 " 9.99	30
10.00 " 10.99	22
11.00 " 11.99	12
12.00 " 12.99	4

When n is the number of items in a series, the median is $\frac{n+1}{2}$. Here $n = 359$. $\frac{359+1}{2} = 180$. That group which contains the 180th item is the median group. Counting down or up, this is the group \$6.00 to \$6.99. There are 65 men in this group. Assuming an even distribution of these between \$6.00 and \$6.99, the rate received by the 180th man is the rate of the 53rd man in the group. It is, therefore, $\frac{53}{65} \times \$1.00 + \$6.00$, or \$6.82, which is the median wage rate. The lower class limit is \$6.00; to get the average, $\frac{53}{65}$ of \$1.00 is added to it. The arithmetic average for the same series is \$7.00.

THE GEOMETRIC MEAN.—The geometric mean is the nth root of the product of the items in a series, n being the number of items in the series.

The computation of the geometric mean is laborious and for most practical purposes its usefulness is questionable. It is valuable in constructing index numbers because index numbers made thus can be shifted readily from one base to another.

Index Numbers

DEFINITION.—Index numbers, in the form usually of averages, are employed to show trends in prices or in other movements which can be quantitatively expressed by means of statistical data. Usually these averages are averages of relative numbers, although it is not uncommon to employ sums of actual prices as index numbers.

CONSTRUCTION OF INDEX NUMBERS.—Table 14 shows the open, high, low, and closing prices of stocks of eight railroad stocks on the New York Stock Exchange on Sept. 25, 1922.

Table 14. Opening, High, Low, and Closing Prices of Eight Railroad Stocks on the New York Stock Exchange, on Sept. 25, 1922

No. Shares Sold	Name of Stock	Open	High	Low	Close
2,500	Atchison	$106\frac{7}{8}$	$106\frac{7}{8}$	106	106
4,900	Baltimore & Ohio	$56\frac{3}{8}$	$56\frac{1}{2}$	$55\frac{1}{8}$	$55\frac{3}{4}$
1,600	Chicago & Northwestern	92	93	92	$92\frac{1}{2}$
100	Illinois Central	113	113	113	113
3,200	Lehigh Valley	$69\frac{3}{8}$	$69\frac{7}{8}$	$68\frac{1}{2}$	$68\frac{1}{2}$
1,800	Northern Pacific	$86\frac{7}{8}$	$87\frac{3}{8}$	$86\frac{3}{4}$	87
1,500	Pennsylvania	$48\frac{1}{2}$	$48\frac{1}{2}$	$48\frac{1}{8}$	$48\frac{1}{4}$
1,100	Union Pacific	151	151	$150\frac{1}{4}$	151

The opening, high, low, and closing prices are to be converted into an index number based on the opening price taken as 100. That is, the high, low, and close prices are to be reduced to percentages of the opening price, and an average taken of these percentages. The results are shown in Table 15. The index numbers of relatives based on the opening prices bring out the significance of price movements better than any inspection of the table of actual prices can do. These index numbers were made without weighting. The eight stocks might be weighted on the basis of the number of shares of each sold, which would change slightly the results secured.

Index numbers can be applied to show tendencies in any phenomena which can be measured statistically and which are chronological in character. Exports, imports, sales, gross and net profits, and practically all items in balance sheets and income statements, may be reduced to an intelligible basis of comparison by being reduced to index number.

Index numbers may be constructed as averages of actual prices rather than as averages of relatives. This method is preferable where it is desirable to make changes in the base year, because when index numbers are

Table 15. Opening, High, Low, and Closing Prices of Eight Railroad Stocks Reduced to Relatives Based on the Opening Prices

Name of Stock	Open	High	Low	Closing
Atchison	100	100.00	99.18	99.18
Baltimore & Ohio	100	100.22	97.78	98.89
Chicago & Northwestern	100	101.09	100.00	100.54
Illinois Central	100	100.00	100.00	100.00
Lehigh Valley	100	100.72	98.74	98.74
Northern Pacific	100	100.57	99.86	100.14
Pennsylvania	100	100.00	99.23	99.48
Union Pacific	100	100.00	99.50	100.00
Index numbers in form of averages of relatives	100	100.33	99.29	99.62

averages of relatives it is necessary, if theoretical accuracy is desired, to make the whole computation anew when it is desired to change the base year. However, the short method is sometimes used in connection with other index series, such checks being made as to the error probably resulting as are available. When index numbers are based on actual prices they are still averages, but not averages of relatives. Consequently any year may be used as a base by assuming the average for that year to represent 100 and dividing it into the average of actual prices for the other years represented.

GENERAL AND SPECIAL PURPOSE INDEX NUMBERS.—General purpose index numbers are those constructed for the purpose of being used by all who may have occasion to apply them. This sometimes leads to their misuse, because they are employed to prove things which are quite incompatible. Special purpose index numbers are those constructed for a single purpose, as, for example, to show the trend of sales of a department store.

STEPS IN CONSTRUCTION OF INDEX NUMBERS.—Professor W. C. Mitchell enumerates the steps involved in the construction of index numbers as follows:

(1) Defining the purpose for which the final results are to be used; (2) deciding the numbers and kinds of commodities to be included; (3) determining whether these commodities shall be treated alike or whether they shall be weighted according to their relative importance; (4) collecting the actual prices of the commodities chosen, and, in case a weighted series is to be made, collecting also data regarding their relative importance; (5) deciding whether to measure the average variations of prices or the variations of a sum of actual prices; (6) in case average variations are to be measured, choosing the base upon which relative prices shall be computed; and (7) settling upon the form of average to be struck.

At each one of these successive steps choice must be made among alternatives that range in number from two to thousands. The possible combinations among the alternatives chosen are indefinitely numerous. Hence there is no assignable limit to the possible

varieties of index numbers, and in practice no two of the known series are exactly alike in construction. To canvass even the important variations of method actually in use is not a simple task.

Use great care in the selection and use of data for purposes of index number making. There is never a single price for a commodity, because prices vary as between wholesale and retail, locality, and so on. The data used must be truly representative. If selection is necessary because of the impossibility of including all data, use care to see that it is representative. Regarding the choice of commodities and the importance assigned to each, Professor Mitchell says:

As for the small series made from the prices of foods alone or from the prices of any single group of commodities, it is clear that, however good for special uses they may be, they are untrustworthy as general-purpose index numbers.

The second conclusion . . . . is that large index numbers are more trustworthy for general purposes than small ones, not only in so far as they include more groups of related prices, but also in so far as they contain more numerous samples from each group. What is characteristic in the behavior of the prices of farm crops, of mineral products, of manufactured wares, of consumers' goods, etc.—what is characteristic in the behavior of any group of prices—is more likely to be brought out and to exercise its due effects upon the final results when the group is represented by 10 or 20 sets of quotations than when it is represented by only one or two sets. The basis of this contention is simple: In every group that has been studied there are certain commodities whose prices seldom behave in the typical way, and no commodities whose prices can be trusted always to behave typically. Consequently, no care to include commodities belonging to all the important groups can guarantee accurate results, unless care is also taken to get numerous representatives of each group.

TENDENCIES IN PRICE FLUCTUATIONS.—Most economic phenomena tend to move in cycles and to obey certain laws. Periods of falling and rising prices alternate. The prices of a large variety of commodities tend to fluctuate in unison but variations in rate of increase or decrease occur, while in some instances movements of individual commodities are opposite to the general tendency. Large differences from the normal tendency are fewer than small ones. The following chart (Fig. 2) constructed by Mitchell shows variations of 1913 prices of 241 commodities from (1) prices of the same commodities in 1912, and (2) from average prices of the period 1890-1899.

As shown by the solid line, a close correspondence exists between 1913 and 1912 prices. As shown by the dotted line, the co-ordination between 1913 prices and average prices for the years 1890-1899 is not nearly so great. "Price fluctuations, then, become dispersed over a wider range and less concentrated about their mean as the time covered by the variations increases."

THE BASE TO USE.—In the application of index to prices the choice of a base year is affected by the method followed in constructing the index number. If it is an average of relatives, the base cannot be easily changed. If it is an average of actual prices expressed in percentages related to a given year taken as a base and expressed as 100, the base can be readily changed by a recomputation of these percentages on the basis of some other year taken as the base. When the base is recomputed each year the index number is known as a chain-relative. Chain-relatives show differences from year to year but not over extended periods of years. Chain-relatives readily admit changing of items in case some become obsolete or unrepresentative. No definite rule can be laid down, but the base to use must be made dependent upon circumstances which affect the problem in hand.

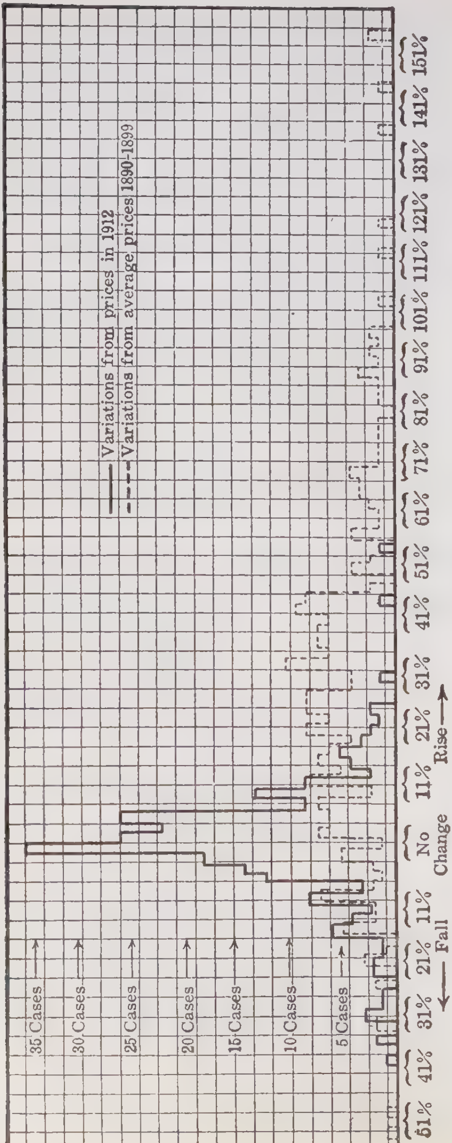

FIG. 2. Distribution of the Price Variations of 241 Commodities in 1913
(Percentage of rise or fall in prices)
(From Horace Secrist, "An Introduction to Statistical Methods")

THE AVERAGE TO USE.—Ordinarily the best average to use in making index numbers is the arithmetic average. It is simple and familiar to all accountants. The geometric mean possesses one important advantage, viz., shifting of the base without a recomputation of all data. Mitchell says:

Wise choice of the average to use in making an index number, then, involves careful consideration of the materials to be dealt with and of the purpose in view. (1) If that purpose be to measure the **average ratio of change** in prices, the geometric mean is the best, indeed, in strictness, is the only proper average to employ. . . . . (2) But . . . . geometric means are not proper averages for measuring alterations in the amount of money that goods cost. And as a rule our interest does center in the money cost of goods rather than in the average ratio of changes in price. . . . . For such purposes the arithmetic mean is the logical average to use. (3) Frequently, however, the very fact that an article has advanced greatly in price cuts down its market so that the increase in money cost represented by the arithmetic mean exists on paper rather than in fact. When such cases of extreme advance are numerous among the relative prices to be averaged, the median may give more significant results than the arithmetic mean. (4) When the number of commodities included in the index number is small, however, medians are likely to prove highly erratic, representing less the general trend of prices than the peculiarities of the data from which they are made. (5) If the index number is designed for the public at large, the familiarity of arithmetic means is an argument in their favor; but it counts for nothing in figures intended for specialists. (6) Often the usefulness of a new index number may be enhanced without detriment to its own special purpose by throwing it into a form directly comparable with that of index numbers already in existence. Then, of course, not only the form of average but also the base period employed in making the existing series has special claims for imitation. (7) Finally, the desirability of making index numbers that can be shifted from one base to another deserves far more consideration than is commonly accorded it. On this count the score is in favor of the geometric mean. If geometric means were invariably used, all index numbers could readily be compared with one another, whatever the bases on which they were originally computed. And that would be a great gain to all students of prices.[1]

WEIGHTING.—In weighted index number the influence of each item averaged is proportional to its relative importance. Various systems of weight are in use. In a given instance that system should be followed which best accomplishes the purpose of giving to each item its due relative influence. If retail prices are being studied the normal family budget is a logical basis for weighting. In case of wholesale prices the amount produced serves as a basis. Sometimes weighting occurs unconsciously, as when an unimportant item is given equal weight with an important one in constructing an index number. Usually the effect of weighting is less than would be supposed. Bowley's rule is: "In calculating averages give all care to making the items free from bias, and do not strain after exactness in weighting."[2] Weighting is simply securing a proper distribution of samples. If this distribution is secured in collecting data, i.e., if the data is free from bias, weighting is superfluous. It is sometimes easier, however, to use weights than to secure a correct distribution of samples. When correct weighting does not materially affect the result, it may be assumed that a correct distribution of samples has been secured. When it does materially affect the result, it may be assumed that the sampling is not representative. Weights should then be used or more representative sampling made. Ordinarily weights, having once been determined, should not be changed, unless the need is very evident because of the greatly altered status of the commodities or prices from which the data is secured.

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[1] Bulletin of U. S. Bureau of Labor Statistics, whole No. 173, pp. 88–90.
[2] Elements of Statistics (2d Ed.), p. 118.

Dispersion

DEFINITION.—By dispersion is meant the variation of the items in a statistical series from the average of the series. In economic statistics uniformity of distribution is rare. Measures of dispersion express the essential facts about this variation from the average or characteristic.

MEASURES OF DISPERSION.—One measure of dispersion is the **range.** It expresses the limits of the distribution in a series. In determining the range, time series and frequency series must be treated differently. In time series the range is expressed by citing the upper and lower limits, but these may not be the same as the opening and closing dates. In frequency series the range is expressed by citing units. The range may not give any conception of distribution between extremes, however and in series of irregular distribution this is also important. Frequently extremes in a series are of little importance as compared with intermediate items. What is desired is an expression which summarizes extent of deviations from average.

The **decil** method of showing dispersion consists in plotting the extreme limits and the nine intermediate points which measure equal distances along the series. Table 16, taken from Professor W. C. Mitchell's "Business Cycles" (p. 112), illustrates the decil method of showing dispersion of wholesale prices:

Table 16. The Decils of Relative Wholesale Prices in the United States, by Years, 1890-1910

Years	Lowest Relative Price	1st decil	2nd decil	3rd decil	4th decil	5th decil (Median)	6th decil	7th decil	8th decil	9th decil	Highest Relative Price
1890...	86	97	101	105	108	112	116	119	126	133	160
1...	74	99	101	105	109	111	113	116	122	132	158
2...	61	92	99	101	104	107	108	111	114	118	141
3...	70	90	96	100	102	104	106	109	111	119	158
4...	46	79	85	91	94	96	99	101	103	111	129
5...	53	79	86	88	91	94	95	98	100	105	149
6...	39	71	79	85	88	90	92	95	98	100	142
7...	56	71	78	85	88	91	93	95	98	102	128
8...	48	77	84	87	91	94	96	99	101	108	155
9...	46	86	89	94	97	100	103	108	112	129	149
1900...	59	90	98	102	106	109	113	118	123	136	192
1...	49	90	97	101	104	107	111	115	120	133	222
2...	45	91	98	102	107	110	114	119	134	145	194
3...	43	90	98	104	108	111	114	121	129	143	192
4...	60	91	98	103	106	112	117	120	130	143	197
5...	59	85	97	104	110	114	120	126	131	149	238
6...	62	89	100	108	114	119	124	131	137	159	279
7...	42	95	104	112	121	129	132	139	147	171	304
8...	45	89	102	107	113	119	124	130	139	156	228
9...	48	89	102	111	117	121	127	135	146	172	243
10...	48	86	103	112	118	124	132	144	154	187	363

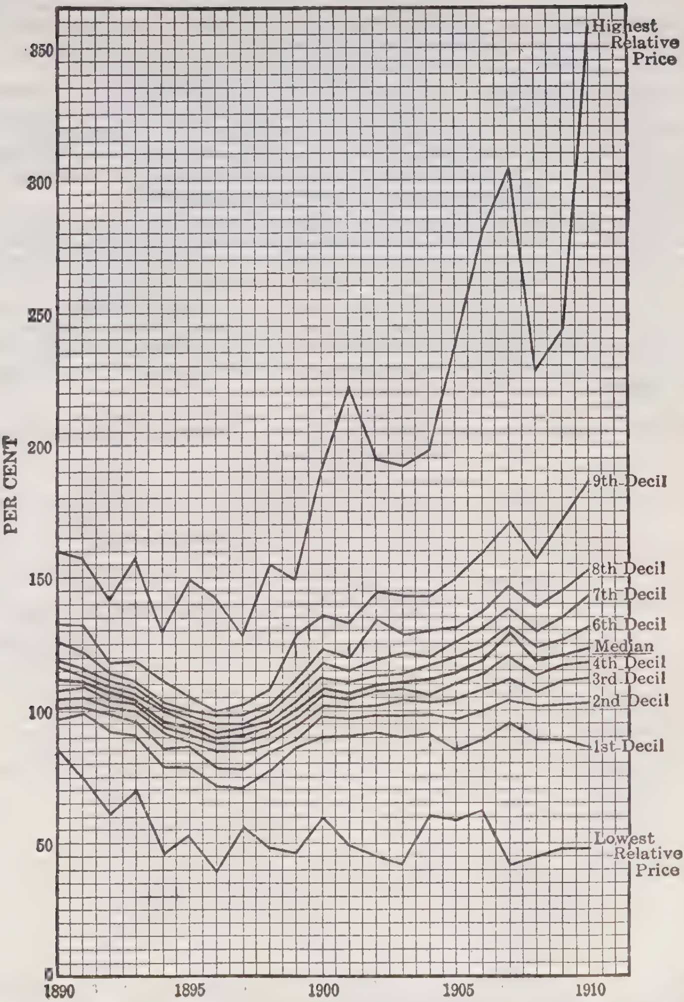


FIG. 3. Curves showing by the Range and the Decil Methods, the Dispersion of the Fluctuations in Relative Wholesale Prices of 145 Commodities, 1890–1910 (Based on Table 16)

(From Horace Secrist, "An Introduction to Statistical Methods")

An examination of this table indicates to what degree the various series of prices are described and their distribution indicated by the decil method. The table also shows the ranges of the various series. In the following diagram (Fig. 3) these decils and extremes are shown graphically.

The **average deviation** is the sum of the deviations from an average divided by the number of items in the series. In case of the arithmetic average the sum of the deviations, signs considered, is a maximum, i.e., is greater than for any other average. For the median the sum of the deviations is a minimum, i.e., is smaller than for any other average. In the following illustrations the arithmetic average is used. Secrist says:[3]

> The average deviation is an average. It is not different in this respect from the average of the original data. It does not represent a series of deviations in detail but only attempts to record a type. When they are uniform and small it does this satisfactorily. When they are large and different, it fails here as it does in the original case.

In calculating the average deviation, either the true arithmetic average or an assumed arithmetic average may be employed. Table 17 shows the calculations necessary for the computation of the average deviation in a historical series which shows respectively, the freight revenue of the Pennsylvania Railroad Co. to the nearest million dollars.

Table 17. Freight Revenues of the Pennsylvania Railroad Co. for the Years 1912-1917, Inclusive

(In round millions of dollars)

Years	Amount in Round Millions	Frequencies	Deviations: From 146, the Average −	Deviations: From 146, the Average +	Deviations: Total (ignoring signs)
Totals...	Aver. $146	6	49	49	98
1912.........	$128	1	18		
13.........	135	1	11		
14.........	131	1	15		
15.........	141	1	5		
16.........	164	1		18	
17.........	177	1		31	

The average deviation is $98 \div 6 = 16.33$. This means that the average difference of the amounts received as freight revenue from the average of freight revenue for the years 1912-1917, inclusive, was 16.33 million dollars.

Table 18 shows the method of computing the average deviation when an assumed average is used.

The difference in + and − deviations is 24, the excess of minus over plus

[3] An Introduction to Statistical Methods, p. 388.

Table 18. Freight Revenues of the Pennsylvania Railroad Co. for the Years 1912-1917, Inclusive

(In round millions of dollars)

Years	Amount in Round Millions	Frequencies	Deviations: From 150, the Assumed Average –	Deviations: From 150, the Assumed Average +	Deviations: Total (ignoring signs)
Totals...	$876	6	65	41	106
1912..........	$128	1	22		
13..........	135	1	15		
14..........	131	1	19		
15..........	141	1	9		
16..........	164	1		14	
17..........	177	1		27	

differences. The average error is $24 \div 6 = 4$, which subtracted from 150 leaves 146, the true average deviation.

Table 19. Method of Determining Average Deviation in a Group Frequency Series (Direct Method)

Wage Groups	Frequencies in Each Wage Group	Deviations: From the Average $7.00 –	Deviations: From the Average $7.00 +	Deviations: Products of Deviations and Frequencies –	Deviations: Products of Deviations and Frequencies +	Deviations: Total (ignoring signs)
Total........	359			$319.00	$318.50	$437.50
$ 2.00 to $ 2.99..	12	$4.50		$ 54.00		$ 54.00
3.00 " 3.99..	15	3.50		52.50		52.50
4.00 " 4.99..	30	2.50		75.00		75.00
5.00 " 5.99..	70	1.50		105.00		105.00
6.00 " 6.99..	65	.50		32.50		32.50
7.00 " 7.99..	58		$ .50		$29.00	29.00
8.00 " 8.99..	41		1.50		61.50	61.50
9.00 " 9.99..	30		2.50		75.00	75.00
10.00 " 10.99..	22		3.50		77.00	77.00
11.00 " 11.99..	12		4.50		54.00	54.00
12.00 " 12.99..	4		5.50		22.00	22.00

The average deviation in a frequency series is found by multiplying the deviations from the true or assumed average by the frequencies, as shown in Table 19.

The average deviation is found by dividing the sum of the deviations, \$437.50, by the total frequencies, 359, which gives \$1.21 as a result. In this instance the frequencies are in groups and the deviations from the true average are figured on the assumption of an even distribution within groups, the mid-point of each group being taken as representative of the group. Table 20 shows the procedure when the frequency series is not a group frequency series.

Table 20. Method of Determining Average Deviation in a Non-Group Frequency Series

Prices of Suits	Number of Each Suit Sold	Deviations: From the Average \$28.42		Deviations: Products of Deviations and Frequencies		Total (ignoring signs)
		−	+	−	+	
Total........	422			\$2,088.72	\$2,085.48	\$4,174.20
\$15.00...........	47	\$13.42		\$630.74		\$630.74
16.50...........	36	11.92		429.12		429.12
18.00...........	53	10.42		555.26		555.26
22.50...........	80	5.92		473.60		473.60
30.00...........	60		\$ 1.58		\$ 94.80	94.80
33.00...........	30		4.58		137.40	137.40
36.00...........	25		7.58		189.50	189.50
45.00...........	60		16.58		994.80	994.80
50.00...........	31		21.58		668.98	668.98

The difference of \$3.24 in the totals of + and − deviations is due to the fact that the exact true average is slightly over \$28.42.

The average deviation is \$4,174.20 ÷ 422 = \$9.89.

The **standard deviation** is found by squaring the deviations from the arithmetic average, finding the average of these after being squared, and then extracting the square root of this average. It is expressed as a formula as follows:

$$\text{S. D.} = \sqrt{\frac{\Sigma(d^2)}{n}}$$

in which

n = the number of items in the series.
d^2 = the sum of the deviations squared.
Σ = the sum of the products of the frequencies and the squares.
S. D. = standard deviation.

The standard deviation gives emphasis to extreme items in a series because they are squared. In frequency series which follow fairly closely the

normal law of error, the greatest number of frequencies occur near the arithmetic average and the least number farthest from the average. Consequently, in case of extreme items the influence of squaring is greater than that of the number of items in each group. Near the average the greater number of frequencies exerts a correspondingly greater influence. In case of historical series no multiplication for frequencies is made, since each item appears but once, and the distance of the item from the average exerts greater influence by being squared.

As between average deviation and standard deviation, the standard deviation gives emphasis to extremes. It should therefore be employed when it is desired to bring out the influence of the exceptional items in a series. When the influence of the typical is to be emphasized the average deviation should be used.

As a working rule it may be assumed that for symmetrical distributions the average deviation is usually about four-fifths of the standard deviation.

The method of finding the standard deviation for historical series is illustrated in Table 21. The standard deviation is $\sqrt{\frac{1{,}980}{6}} = 18.165$. The average deviation for this series is 16.33, or 89.89% of the standard deviation.

Table 21. Method of Computing the Standard Deviation in a Historical Series

Years	Amount in Round Millions	Frequencies	Deviations From Average, 146 −	Deviations From Average, 146 +	Squared	Squares Multiplied by Frequencies
Total . . .	Aver. $146	6				1,980
1912.	$128	1	18		324	324
13.	135	1	11		121	121
14.	131	1	15		225	225
15.	141	1	5		25	25
16.	164	1		18	324	324
17.	177	1		31	961	961

The method of finding the standard deviation for frequency series is illustrated in Table 22. $\sqrt{\frac{1{,}715.75}{359}} = 2.12$. The average deviation for this series is $1.21, which is 57% of the standard deviation.

The standard deviation has been used more in the field of biology than of economics. Usually in economic statistics the average deviation is prefer-

Table 22. Method of Computing the Standard Deviation in a Group Frequency Series

Wage Groups	Frequencies in Each Wage Group	Deviations: From the Average $7.00		Deviations: Squared	Deviations: Squares Multiplied by Frequencies
		−	+		
Total..................	359				$1,715.75
$ 2.00 to $ 2.99............	12	$4.50		$20.25	$ 243.00
3.00 " 3.99............	15	3.50		12.25	183.75
4.00 " 4.99............	30	2.50		6.25	187.50
5.00 " 5.99............	70	1.50		2.25	157.50
6.00 " 6.99............	65	.50		.25	16.25
7.00 " 7.99............	58		$ .50	.25	14.50
8.00 " 8.99............	41		1.50	2.25	92.25
9.00 " 9.99............	30		2.50	6.25	187.50
10.00 " 10.99............	22		3.50	12.25	269.50
11.00 " 11.99............	12		4.50	20.25	243.00
12.00 " 12.99............	4		5.50	30.25	121.00

able, because it is not desirable to emphasize extreme cases. The average deviation also possesses the advantage of being more easily computed. The standard deviation is used, however, in computing Pearson's coefficient of correlation.

The **quartile measure** of dispersion applies only to those items of a statistical series which lie between the first and third quartiles. It is found by dividing the difference between the first and third quartiles, by 2. The quartiles are those items of a series which lie ¼, ½, and ¾ the way along it. They thus divide it into four parts, each containing an equal number of items. If Q1 and Q3 represent the first and third quartiles, respectively, the quartile measure is expressed as,

$$\frac{Q3 - Q1}{2}.$$

In symmetrical series the quartile measure and the median coincide.

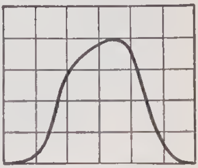
The semi-quartile range may be reduced to a ratio basis by dividing the difference between the two quartiles by the sum of the quartiles, thus:

$$\frac{Q3 - Q1}{Q3 + Q1}.$$

This ratio always lies between 0 and 1, but increases as the distance between the quartiles increases. The quartile measure is a suitable means of summarizing a series when extremes are not important. It must be used with care, however, because one-half the items in the series are ignored. It is sometimes desirable to employ it in conjunction with the average and standard deviations.

The **probable error** is employed in statistics to indicate how closely samples taken from a large mass of data approximate to the results which would have been secured had the whole mass of data been used. Sample measurements must ordinarily be used because of the obvious impossibility of measuring all data. Thus in studying the operating ratio of grocery stores it is obviously impossible to take into consideration all grocery stores. In studying family budgets it is impossible to study more than a relatively small number of samples. The usefulness of the probable error is based on the assumption that if all data were used the distribution would follow the normal curve of error, i.e., that it would be perfectly symmetrical. When data which follows the normal law of error is plotted, the curve is of the regular bell shape shown below.

The probable error bears a definite relation to the standard deviation of such distributions, but it is only when the data follow the normal law of error that this definite relationship holds. It is .6745 of the standard deviation. Approximately, the probable error is two-thirds of the standard deviation in case of distributions which follow the normal law of error. In using the probable error to check up the reliability of samples, its limitation to distributions which follow the normal law of error should be borne in mind. The following quotation from W. S. Jevon's "The Principles of Science"[4] illustrates the meaning of the probable error:



> Suppose, for instance, that five measurements of the height of a hill . . . . have given the numbers of feet as 293, 301, 306, 307, 313; we want to know the probable error of the mean, namely 304. Now the difference between the mean and the above numbers, paying no regard to directions, are 11, 3, 2, 3, 9; their squares are 121, 9, 4, 9, 81, and the sum of the squares of the errors consequently 224. The number of observations being 5, we divide by 1 less, or 4, getting 56. This is the square of the mean error, and taking its square root we have 7.48 (say 7½), the mean error of a single observation. Dividing by 2.236, the square root of 5, the number of observations, we find the mean error of the mean result to be 3.35, or say 3⅜, and lastly multiplying by .6745, we arrive at the **probable error of the mean result,** which is found to be 2.259, or say 2¼. The meaning of this is that the probability is one half, or the odds are even that the true height of the mountain lies between 301¾ and 306¼. We have thus an exact measure of the degree of reliability of our mean result, which mean indicates the most likely point for the truth to fall upon.

The probable error is the deviation above and below the median such that one-half the items in the series are included. The chances are even that any given measurement will fall between the first and third quartiles in a statistical series; consequently we can say that the chances are even that the true value lies between certain limits. These limits are the probable error. In other words, the probable error is the amount of deviation both above and below the median which includes exactly one-half the measures of the series.

The probable error may be computed for the arithmetic averages of a series of measurements. The formula is:

$$\pm 0.6745 \times \frac{\text{Standard Deviations of the means}}{\sqrt{\text{Number of Variates}}}$$

or

$$\pm 0.6745 \times \frac{\text{S.D.}}{\sqrt{n}}$$

[4] 2nd. Ed., p. 388.

This formula is used where several series of measurements are made and the average for each is determined. Its purpose is to ascertain the probable error of the averages thus secured. An illustration would be the determination of proper time for doing piece work. Having made several series of tests, the probable error of the averages of these series would be determined.

It should be borne in mind, however, that the probable error is useful only when the distribution approaches the normal probability curve and when the samples used in securing averages are numerous.

Skewness

DISTRIBUTION WITHIN SERIES.—Whereas measures of dispersion such as the average deviation and the standard deviation indicate the extent of variation of the items of a series from the average, they do not show how the distribution is made within the series. The differences from the average are taken into consideration but are not localized so that a general view of the serial arrangement is obtainable. Measures of skewness show this arrangement, thus indicating to what degree the distribution varies from the normal. When a series accords with the normal curve of error the distribution is symmetrical; when it does not, the distribution is asymmetrical.

FIG. 4. Curves Illustrating Skewness

Coefficients of skewness reduce the amounts of asymmetry of statistical series to a relative basis, thus permitting an exact comparison of skewness of statistical series.

In practically all economic statistics skewness exists. It is positive or negative accordingly as the arithmetic average exceeds or is less than the mode. In the following figures (Fig. 4) skewness is positive in 1, negative in 2, and absent in 3:

As a rough working rule it may be assumed that in moderately asymmetrical distributions the median lies about $\frac{2}{3}$ the distance between the mode and the arithmetic average, lying $\frac{1}{3}$ the distance away from the arithmetic average and $\frac{2}{3}$ from the mode. It is expressed as an equation:

$$\text{Mode} = \text{arithmetic average} - 3(\text{arithmetic average} - \text{median})$$

In the group frequency series on page 736, the mode, by inspection, is \$5.50. The median is \$6.82 and the arithmetic average is \$7.00. According to the above formula the mode should be:

$$\text{Mode} = \$7.00 - 3(\$7.00 - \$6.82) = \$6.46$$

When mode = mean − 3(mean − median) is exceeded, the skewness is large; when the result is less than the true mode, skewness is small. It is large in the following illustration, because the mode \$5.50 is exceeded by the results secured with the formula. This is shown by the following plot of the series (Fig. 5).

Skewness may be reduced to a coefficient by dividing the difference between the arithmetic average and the mode by the standard deviation, expressed as a formula, thus:

$$\frac{\text{Arithmetic average} - \text{mode}}{\text{S.D.}}$$

If the arithmetic average is larger than the mode, the result is positive, and skewness is positive. If it is less than the mode, the result is negative, and skewness is negative. For the above series standard deviation is \$2.12, and the coefficient of skewness is:

$$\frac{\$7.00 - \$5.50}{\$2.12} = +.71$$

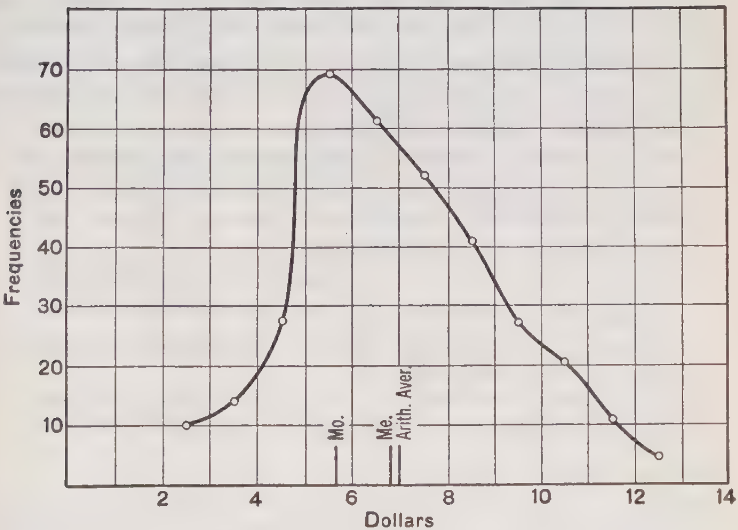


Fig. 5. Plot of Frequency Series

A coefficient of skewness may also be secured by dividing by the average deviation, thus:

$$\frac{\$7.00 - \$5.50}{\$1.21} = +1.24$$

The purpose in reducing skewness to coefficients is to permit comparison of one series with another.

Measures and coefficients of both dispersion and skewness should be employed in practical statistical work, such as studies of wages, sales, price movements, and so on. Coefficients are especially useful in bringing out comparisons and relationships which are otherwise obscured in a multiplicity of details.

Comparison

DEFINITION.—In statistics the study of comparison has for its object the determination of any connection between two sets of phenomena statistically expressed. In correlation, not only is this connection determined but its extent is measured. When one group of phenomena moves in a greater or less degree of conformity with another group and in the same direction, correlation exists and is positive. When one group moves in conformity with another but in the opposite direction, correlation exists but is negative.

METHODS OF COMPARISON.—The better known methods of comparing frequency distributions of two or more groups of data are given by King[5] as follows:

> 1. **Simple frequency tables and historigrams.**—These are desirable to show the absolute as well as the relative size of the various classes in the groups compared.
> 2. **Percentage frequency tables and historigrams.**—These are desirable to show relative distributions between the higher and lower groups, but do not show actual quantities.
> 3. **Absolute cumulative tables and ogives.**—These are intended primarily to ascertain the median, quartiles, decils, etc., but also serve as substitutes for simple frequency tables and historigrams.
> 4. **Percentage cumulative tables and ogives.**—For purposes of comparisons these are better than absolute cumulative tables and ogives, but not as good to compute quartiles, etc.
> 5. **Lorenz tables and curves.**—These are employed to show the distribution of wealth, etc., at different periods or in different places.
> 6. **Coefficients of dispersion.**—These afford a numerical measurement of deviations of a series from some type.
> 7. **Coefficients of skewness.**—These furnish a numerical measurement of symmetry of statistical series.
> 8. **Coefficients of correlation.**—These afford quantitative measurement of the degree to which two or more series move in relation to one another, and whether such relationship is positive or negative.

King comments on 1 as follows:

> This is the best method of showing the actual changes in different variables. If the wheat crops of the leading nations are plotted, both the change in production for each nation during the period and the relative product of each nation at any given time is revealed at a glance.

and on 2:

> These are used when the only desideratum is to compare changes and not the absolute size of the quantities in the two series. All the curves being reduced to like bases, it is easy to compare the proportional changes relative to the base, in the different variables during the same period. Thus, we can see at a glance whether the proportional increase in the population of New York from 1900 to 1910 was greater or less than that of Wyoming for the same period. The fact that the absolute increase in New York was vastly larger than that in Wyoming in no way obscures the record of the comparative proportional change. It must be reiterated that the index curves, however, do not indicate the proportional change in either state for the last decade as compared with the change of some past decade.

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*From W. I. King's "The Elements of Statistical Method" (page 187-188), copyrighted by The Macmillan Company. This and other excerpts are reproduced by permission of author and publisher.

and on 3:

Simple logarithmic historigrams show by their vertical movements the comparative **proportional** changes, relative to the preceding period, in two or more variables during the same time-interval. Their respective inclinations from the horizontal at the time of crossing any given time-ordinate indicate the **proportional rates** of change in the different variables at this date. As has been before stated, comparison of logarithmic historigrams is facilitated by vertical shifting of the curves until they are in proximity to each other, the eye being thus enabled to better follow and compare their trends. This effect is accomplished mathematically instead of mechanically if the original data, in each instance, are reduced to index series and the logarithms of the indices instead of those of the original numbers plotted. Since logarithmic curves are of no practical value for showing the absolute size of the different variables at any given date, nothing whatever is lost by the preliminary reduction to index-series or the consequent vertical shifting for the graphs.

LONG- AND SHORT-PERIOD FLUCTUATIONS.—In many series of the historical type, two or more variations of fluctuations frequently exist. The short-period fluctuations are usually seasonal in character, whereas the long-period fluctuations are due to fundamental forces operating over terms of years. In order to study a given type of fluctuation, eliminate the other or others.

In studying long-period fluctuations, eliminate the short-period by means

Table 23. Illustrating the Determination of the Trend

Date	Mean Temperature (Fahr. in Deg.)	Moving Average, 7-Day Grouping
Mar. 1	20	....
2	25	....
3	22	....
4	35	24.0
5	26	24.0
6	22	24.4
7	18	26.1
8	20	26.7
9	28	28.7
10	34	29.9
11	39	31.9
12	40	32.7
13	30	33.6
14	32	34.9
15	26	36.1
16	34	37.1
17	43	38.4
18	48	38.9
19	47	41.1
20	89	43.3
21	35	44.3
22	42	....
23	49	....
24	50	....

of the moving average. In fixing a moving average group, give attention to the size of the cycle. This may be ascertained by first plotting as a historigram, and then observing the average time-distance between successive crests or between successive troughs. In the accompanying table (23) and graph (Fig. 6), taken from King's "Elements of Statistics" (pp. 170–171), the wave lengths run 6 to 8 days.

Use an odd number of items for the moving average, so that the average may be plotted each time opposite the central item. In this illustration 7 days are taken for the moving average, one being dropped at one end and one added at the other, each time the average is moved along a point. The moving average cannot be carried out to the extremes of the data because the first item of the moving average is located four points from the opening date

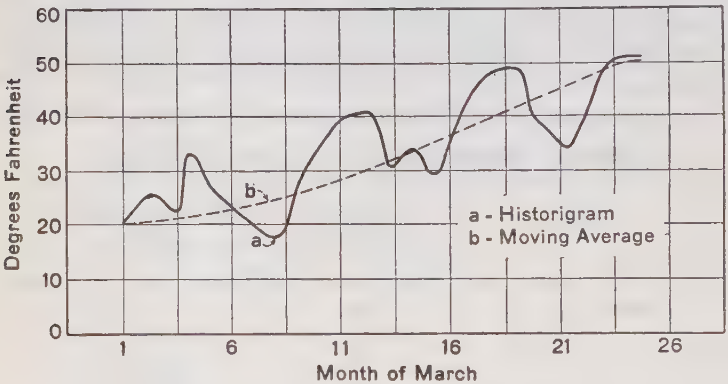


FIG. 6. The Moving Average of Trend (Based on Table 23)
(From W. I. King, "The Elements of Statistical Method")

and the last item four points from the closing date. When no regular periodicity occurs do not use the moving average to remove short-time trend. In plotting historigrams use care in selecting the vertical scale. If too much space is given to each vertical unit, fluctuations will be exaggerated. If too little space is given, too great uniformity will occur.

ELIMINATION OF LONG-PERIOD VARIATIONS.—It is sometimes desirable to eliminate long-period variations, thus showing only short-period oscillations. To do this plot the data as a graph and find the moving average. Find the deviations from the moving average and plot these on a horizontal base line. Illustration of the foregoing is found in the following data reproduced from King's "Elements of Statistical Method" (pp. 194-196).

The table (24) shows hypothetical data for supply and prices. Moving averages are constructed for both based on a 5-year period, and deviations from these averages are computed. The first graph (Fig. 7) shows the elimination of short-period fluctuations. The second graph (Fig. 8) shows the elimination of long-period fluctuations and brings out the short-period fluctuations.

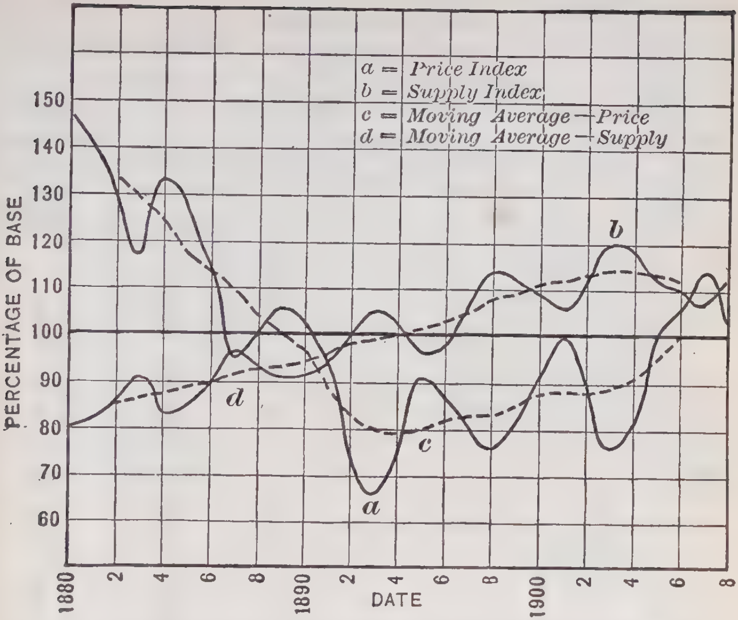


FIG. 7. Index Historigrams with Moving Averages Indicating Relationship of Supply and Price (Based on Table 24)
(From W. I. King, "The Elements of Statistical Method")

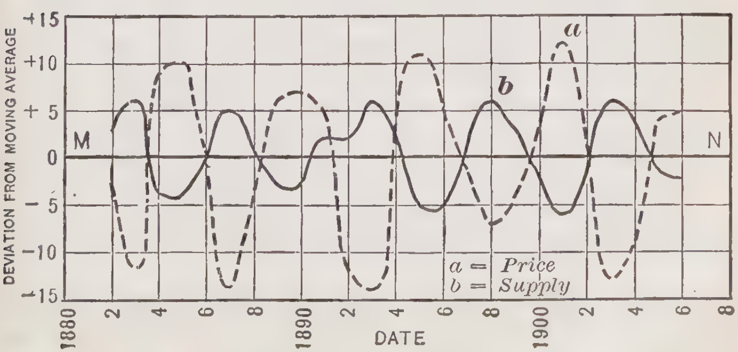


FIG. 8. Short-Time Oscillations—Supply and Price (Based on Table 24)
(From W. I. King, "The Elements of Statistical Method")

Table 24. Comparison of Short-time Fluctuations Only in the Supply and Price of a Commodity

Date	Supply			Price		
	Index of Supply	Moving Average of Indices	Deviations from Moving Average	Index of Price	Moving Average of Indices	Deviations from Moving Average
1880....	80			146		
1....	82			140		
2....	86	84	+2	130	133	− 3
3....	91	85	+6	117	129	− 12
4....	83	87	−4	133	124	+ 9
5....	85	89	−4	127	117	+ 10
6....	89	89	0	115	114	+ 1
7....	96	91	+5	95	109	− 14
8....	93	92	+1	100	104	− 4
9....	90	93	−3	106	100	+ 6
1890....	91	94	−3	103	96	+ 7
1....	94	96	−2	94	89	+ 5
2....	100	98	+2	75	83	− 8
3....	105	99	+6	66	80	− 14
4....	102	100	+2	75	79	− 4
5....	96	101	−5	91	80	+ 11
6....	98	103	−5	87	82	+ 5
7....	106	105	+1	81	83	− 2
8....	114	108	+6	76	83	− 7
9....	112	109	+3	82	86	− 4
1900....	109	111	−2	91	88	+ 3
1....	106	112	−6	100	88	+ 12
2....	112	113	−1	89	88	+ 1
3....	120	114	+6	76	89	− 13
4....	118	114	+4	82	91	− 9
5....	112	113	−1	100	96	+ 4
6....	110	112	−2	106	101	+ 5
7....	107			114		
8....	113			103		
	Av. 100			Av. 100		

NOTE. The numbers in the above table are accurate to units place, all decimals being dropped.

ABSOLUTE AND RELATIVE CHANGES.—For purposes of making comparisons between series it is frequently best to reduce them to a relative basis, because rates of increase and decrease are more easily interpreted when reduced to a percentage basis. For showing proportional changes graphically, logarithmic historigrams have been devised. These are based on the principle that an equal increase in the logarithm of a number indicates

multiplication by an equal number, and therefore an equal proportional change. Prepared paper can be secured for the purpose of plotting ratio curves and no knowledge of logarithms is required in its use.[6] The same effect is secured by reducing the data to be plotted to index or relative numbers, and then plotting these. This process is especially useful when the absolute differences are so great that it is difficult to plot them as such on the same chart. When variables are thus expressed as percentages, the base

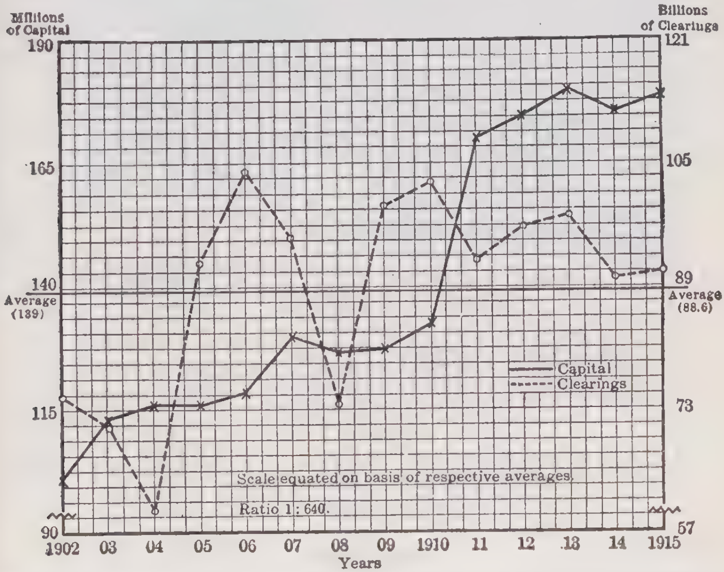


FIG. 9. Capital and Clearings of New York Clearing House Banks, 1902–1915 (Method of scale conversion)

(From Horace Secrist, "An Introduction to Statistical Methods")

upon which they are computed and which is regarded as 100% is the first, last, intermediate, or an average of the different variables. These principles are illustrated in Figs. 9 and 10, reproduced from Secrist's "An Introduction to Statistical Methods" (pp. 224, 226), showing capital and clearings of New York Clearing House banks, 1902–1915. Fig. 9 shows capital and clearings plotted on the basis of absolute amounts but different scales. Fig. 10 shows the same data reduced to relative bases and plotted on the basis of both the first and last variables.

In Fig. 9 the comparison is between absolute amounts based on different scales. In Fig. 10 the comparison is in percentage of increase and decrease,

[6] Logarithmic paper may be secured ready for use from the following firms: Educational Exhibit Co., 26 Custom House St., Providence, R. I.; John Wenzel, 63 West 107th St., New York City; Keuffel & Esser Co., 127 Fulton St., New York City; and the Standard Graph Co., 32 Union Sq., New York City.

a true ratio basis of comparison. The ratio chart is useless, however, if the absolute and not the relative changes are to be emphasized.

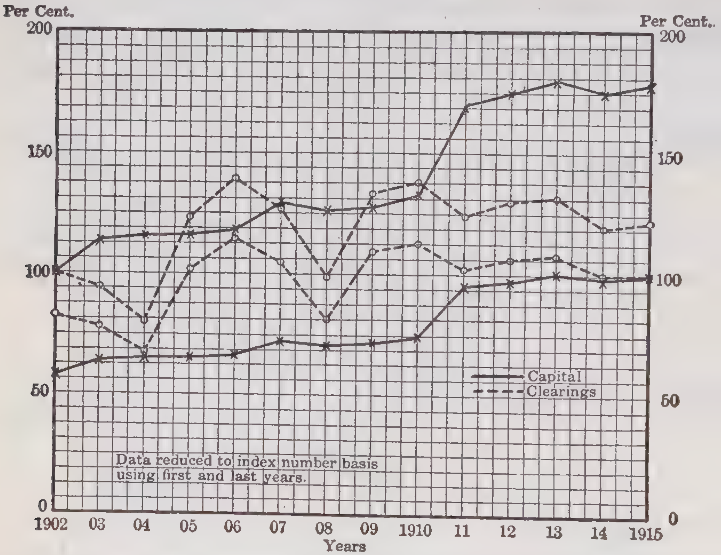


FIG. 10. Capital and Clearings of New York Clearing House Banks, 1902–1915 (Method of scale conversion)

(From Horace Secrist, "An Introduction to Statistical Methods")

Correlation

DEFINITION.—Correlation measures the degree of conformity existing between statistical series, and shows whether it is positive or negative. The existence of correlation does not necessarily prove a causal connection which must be determined through analysis. Correlation may be indicated graphically but graphs do not give a quantitative measurement of the degree of correlation. To supply this want a **coefficient of correlation** is necessary.

PEARSON'S COEFFICIENT OF CORRELATION.—The most satisfactory method of reducing correlation to a coefficient is provided by Karl Pearson's formula. This formula was originally meant for use in biological studies but it has also been widely used by economists and financial students. If $x_1, x_2, x_3, x_4, \ldots\ldots x_n$, are the deviations of the items from the arithmetic average of one series, $y_1, y_2, y_3, y_4 \ldots\ldots y_n$, the deviations of the items from arithmetic average of the other series, o_1, is the standard deviation of the former series, o_2 is the standard deviation of the latter series, then r, the coefficient of correlation, is expressed as:

$$r = \frac{\Sigma\,(xy)}{n\,o_1 o_2}$$

This formula can be applied both to data representing variations in items at a given time and to historical series, but in its original form it can be used only in connection with long-time changes. To make the formula show correlation for short-period fluctuations, take the deviations of the items from the trend instead of from the arithmetic average. The application of this plan is illustrated in the following table (25) reproduced from King's "Elements of Statistical Method" (pp. 204–205).

Table 25. Illustrating the Correlation of Short-time Oscillations by Means of Pearson's Modified Coefficient

Date	Supply				Price				xy
	Index of Supply	Moving Average of Indices	x Deviations from Moving Average	x^2	Index of Price	Moving Average of Indices	y Deviations from Moving Average	y^2	
1880..	80				146				
1..	82				140				
2..	86	84	+2	4	130	133	− 3	9	− 6
3..	91	85	+6	36	117	129	−12	144	− 72
4..	83	87	−4	16	133	124	+ 9	81	− 36
5..	85	89	−4	16	127	117	+10	100	− 40
6..	89	89	0	0	115	114	+ 1	1	0
7..	96	91	+5	25	95	109	−14	196	− 70
8..	93	92	+1	1	100	104	− 4	16	− 4
9..	90	93	−3	9	106	100	+ 6	36	− 18
1890..	91	94	−3	9	103	96	+ 7	49	− 21
1..	94	96	−2	4	94	89	+ 5	25	− 10
2..	100	98	+2	4	75	83	− 8	64	− 16
3..	105	99	+6	36	66	80	−14	196	− 84
4..	102	100	+2	4	75	79	− 4	16	− 8
5..	96	101	−5	25	91	80	+11	121	− 55
6..	98	103	−5	25	87	82	+ 5	25	− 25
7..	106	105	+1	1	81	83	− 2	4	− 2
8..	114	108	+6	36	76	83	− 7	49	− 42
9..	112	109	+3	9	82	86	− 4	16	− 12
1900..	109	111	−2	4	91	88	+ 3	9	− 6
1..	106	112	−6	36	100	88	+12	144	− 72
2..	112	113	−1	1	89	88	+ 1	1	− 1
3..	120	114	+6	36	76	89	−13	169	− 78
4..	118	114	+4	16	82	91	− 9	81	− 36
5..	112	113	−1	1	100	96	+ 4	16	− 4
6..	110	112	−2	4	106	101	+ 5	25	− 10
7..	107				114				
8..	113				103				
	Av. 100		Total	358	Av. 100		Totals	1,593	−728

Note.—The figures in the above table are only read to the nearest unit.

$$\sigma_1 = \sqrt{\frac{\Sigma x^2}{n}} = \sqrt{\frac{358}{25}} = \sqrt{14.32} = 3.78$$

$$\sigma_2 = \sqrt{\frac{\Sigma y^2}{n}} = \sqrt{\frac{1.593}{25}} = \sqrt{63.72} = 7.98$$

$$r = \frac{\Sigma (xy)}{n\,\sigma_1\sigma_2} = \frac{-728}{25 \times 3.78 \times 7.98} = -.965$$

This data is the same as is used in constructing the graphs on p. 743. The correlation is negative to a high degree.

This method of ascertaining correlation for series which fluctuate through

Table 26. Correlations of Short-time Fluctuations of Supply and Price by Means of Concurrent Deviations

Date	Supply		Price		Product xy
	Indices of Supply	x Deviations from Preceding Year	Indices of Price	y Deviations from Preceding Year	
1880	80		146		
1	82	+	140	−	−
2	86	+	130	−	−
3	91	+	117	−	−
4	83	−	133	+	−
5	85	+	127	−	−
6	89	+	115	−	−
7	96	+	95	−	−
8	93	−	100	+	−
9	90	−	106	+	−
1890	91	+	103	−	−
1	94	+	94	−	−
2	100	+	75	−	−
3	105	+	66	−	−
4	102	−	75	+	−
5	96	−	91	+	−
6	98	+	87	−	−
7	106	+	81	−	−
8	114	+	76	−	−
9	112	−	82	+	−
1900	109	−	91	+	−
1	106	−	100	+	−
2	112	+	89	−	−
3	120	+	76	−	−
4	118	−	82	+	−
5	112	−	100	+	−
6	110	−	106	+	−
7	107	−	114	+	−
8	113	+	103	−	−

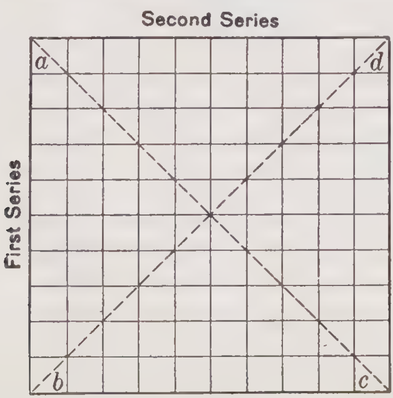
short intervals of time requires considerable work. The following shorter method is useful for practical purposes. Take into consideration only the direction of the deviation of the items from the last preceding date given. This plan is defective in that it does not take into account the size of the deviation; consequently a small change has the same effect as a large one. When the number of items is large, errors resulting from this defect are not usually serious. The formula is:

$$r = \pm\sqrt{\pm\frac{2c-n}{n}}$$

in which r = the coefficient of correlation, n = the number of pairs of items, and c = the number of concurrent deviations. If $\frac{2c-n}{n}$ is negative, the minus sign is introduced before it and also before the radical, in order that the extraction of the square root may not change the sign from that of the original. The above table (26) reproduced from King's "Elements of Statistical Method" (p. 209), shows the manner of deriving the necessary data.

$$n = 28$$
$$c = 0$$
$$r = \pm\sqrt{\pm\frac{2c-n}{n}}$$
$$\therefore r = \pm\sqrt{\pm\frac{0-28}{28}}$$
$$\therefore r = -\sqrt{-(-1)}$$
$$\therefore r = -\sqrt{1}$$
$$\therefore r = -1$$

This shows perfect negative correlation. This plan can be used with irregular eries which do not admit of smoothing by use of a moving average.



Another method of showing correlation, but which does not furnish a coefficient or quantitative measure of it, is to plot the data in a correlation table. The table should be arranged so as to permit one series to be represented in

vertical columns and the other series in horizontal lines. When this is done the arrangement should be somewhat like that shown in Table 27. If positive correlation exists, the corresponding frequencies tend to group themselves more or less closely along the line *ac* (see figure on p. 749). If negative correlation exists, the corresponding frequencies tend to group themselves more or less closely along the line *bd*.

Table 27. Giving the Results of 500 Connected Throws of 12 Dice, in the Second Throws of Which 10 Dice Were Left Down and Counted

			Second Throws												
			0	1	2	3	4	5	6	7	8	9	10	11	12
		Total→ ↓	1	2	7	24	55	93	111	100	64	31	11	1	
	01	1	1	...	...	...	...	...	...	...	...	...	...	...	...
	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...
	2	7	...	...	2	5	...	...	...	...	...	...	...	...	...
	3	24	...	1	3	8	9	3	...	...	...	...	...	...	...
First	4	55	...	...	2	10	18	19	6	...	...	...	...	...	...
Throws	5	110	...	...	...	1	24	43	32	10	...	...	...	...	...
	6	93	...	...	...	...	4	22	37	24	6	...	...	...	...
	7	96	...	...	...	...	...	6	27	39	19	5	...	...	...
	8	60	...	...	...	...	...	...	9	17	24	9	1	...	...
	9	42	...	...	...	...	...	...	...	10	14	11	7	...	...
	10	10	...	...	...	...	...	...	...	...	1	6	2	1	...
	11	1	...	...	...	...	...	...	...	...	...	...	1	...	...
	12		...	...	...	...	...	...	...	...	...	...	...	...	...

This method is clearly illustrated by throwing dice, leaving a given number of dice down each second throw. It was found that the results of 500 connected throws of 12 dice each in the second throws, of which 10 dice were left down and counted, were as shown in Table 27, or, when plotted, as shown in the accompanying graph[7] (Fig. 11). A very considerable degree of positive correlation is here indicated.

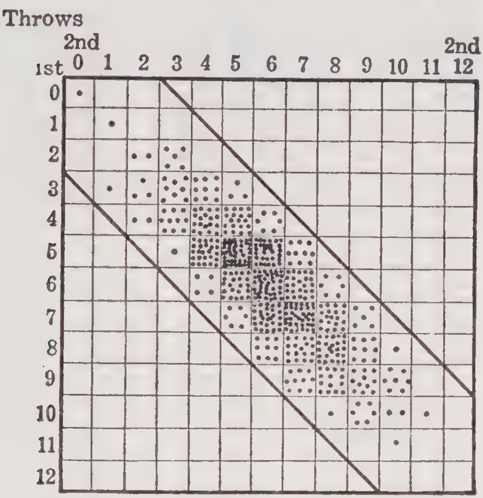
APPLICATIONS OF PEARSONIAN COEFFICIENT OF CORRELATION.—In using Pearson's coefficient of correlation, two different movements may be correlated: (*a*) long-time or secular changes; and (*b*) short-time or cyclical changes. For finding the correlation in case of secular changes, the coefficient should be plotted from the original data. For finding the correlation in case of cyclical changes, the coefficient should be plotted from the smoothed data. The above qualifications apply to historical series. It must be remembered that correlation of a certain amount may often be found to exist between statistical series which have no causal connection whatever; also that positive correlation may exist in long-period or secular fluctuations, whereas negative correlation exists in the short-

[7] Reproduced from Secrist, An Introduction to Statistical Method, pp. 138, 139.

period or cyclical fluctuations. It is sometimes desirable to lag one series behind the other in order to find the correlation when lags of various intervals are taken. The following quotation from Professor H. L. Moore's "Economic Cycles, Their Law and Cause" (pp. 109-110, 122), illustrates the principle involved:

If . . . . we correlate them for lags of various intervals, we shall find it possible to determine the lag that will give the maximum coefficient of correlation, and this particular value of the lag we may then regard as the interval of time required for the cycles in the crops to produce their maximum effect upon the cycles of the activity of industry. When the calculation of the coefficients of correlation is made according to this plan, it is found that for a lag

Of zero years,	$r = .625$
Of 1 year,	$r = .719$
Of 2 years,	$r = .718$
Of 3 years,	$r = .697$
Of 4 years,	$r = .572$



Second Throws Dependent on First Throws—10 Dice in Common

Fig. 11. Graphic Figure Illustrating Correlation by Means of 500 Pairs of Throws of Dice (Based on Table 27)

(From Horace Secrist, "An Introduction to Statistical Methods")

It is clear, therefore, that the cycles in the yield per acre of the crops are intimately related to the cycles in the activity of industry, and that it takes between one and two years for a good or bad crop to produce the maximum effect upon the activity of the pig-iron industry.

If the cycles of the yield per acre are correlated with the cycles of general prices, we find, for a lag of 3 years in general prices, $r = .786$; for a lag of 4 years, $r = .800$; for a lag of 5 years, $r = .710$. The cycles in the yields per acre of the crops are, therefore, intimately connected with the cycles of general prices, and the lag in the cycles of general prices is approximately four years.

Table 28. Showing by States the Capacity Load Factor and the Income per Kilowatt Hour in the Generation of Electrical Energy

State	Capacity Load Factor %	Deviations from Average Load Factor x	Deviations Squared x^2	Income per Kw. Hr. (in cents)	Deviations from Average Income per Kw. Hr. y	Deviations Squared y^2	Product of Deviations (x's) and (y's)
Total....	aver. 21.4		4,144.61	aver. 3.45		177.2011	−444.735
Alabama.....	22.7	+ 1.3	1.69	2.49	− .96	.9216	− 1.248
Arizona......	25.4	+ 4.0	16.00	3.56	− .11	.0121	− .440
Arkansas.....	12.4	− 9.0	81.00	5.45	+2.00	4.0000	− 18.000
California....	33.9	+12.5	156.25	1.59	−1.86	3.4596	− 23.250
Colorado.....	25.3	+ 3.9	15.21	2.89	− .56	.3136	− 2.184
Connecticut. .	19.2	− 2.2	4.84	4.10	+ .65	.4225	− 1.430
Florida.......	12.5	− 8.9	79.21	5.11	+1.66	2.7556	− 14.774
Georgia......	17.8	− 3.6	12.96	2.01	−1.44	2.0736	+ 5.184
Idaho........	37.0	+15.6	243.36	1.37	−2.08	4.3264	− 32.448
Illinois.......	29.3	+ 7.9	62.41	2.52	− .93	.8649	− 7.347
Indiana......	19.9	− 1.5	2.25	3.26	− .19	.0361	+ .285
Iowa.........	14.4	− 7.0	49.00	6.45	+3.00	9.0000	− 21.000
Kansas.......	22.0	+ .6	.36	2.19	−1.26	1.5876	− .756
Kentucky....	15.9	− 5.5	30.25	3.64	+ .19	.0361	− 1.045
Louisiana.....	10.9	−10.5	110.25	12.25	+8.80	77.4400	− 92.400
Maine.......	22.7	+ 1.3	1.69	1.74	−1.71	2.9241	− 2.223
Maryland....	5.0	−16.4	268.96	1.37	−2.08	4.3264	+ 34.112
Mass.........	17.5	− 3.9	15.21	4.17	+ .72	.5184	− 2.808
Michigan.....	23.2	+ 1.8	3.24	2.19	−1.26	1.5876	− 2.268
Minnesota....	22.7	+ 1.3	1.69	3.72	+ .27	.0729	+ .351
Mississippi....	14.6	− 6.8	46.24	4.02	+ .57	.3249	− 3.876
Missouri.....	21.7	+ .3	.09	4.18	+ .73	.5329	+ .219
Montana.....	58.0	+36.6	1,339.56	1.05	−2.40	5.7600	− 87.840
Nebraska.....	18.6	− 2.8	7.84	4.98	+1.53	2.3409	− 4.284
Nevada......	48.6	+27.2	739.84	1.38	−2.07	4.2849	− 56.304
New Hamp...	25.0	+ 3.6	12.96	1.84	−1.61	2.5921	− 5.796
New Jersey...	24.4	+ 3.0	9.00	2.85	− .60	.3600	− 1.800
New Mexico. .	12.9	− 8.5	72.25	5.50	+2.05	4.2025	− 17.425
New York....	32.1	+10.7	114.49	2.63	− .82	.6724	− 8.774
N. Carolina . .	18.7	− 2.7	7.29	1.90	−1.55	2.4025	+ 4.185
N. Dakota....	12.9	− 8.5	72.25	7.01	+3.56	12.6736	− 30.260
Ohio.........	18.6	− 2.8	7.84	2.99	− .56	.3136	+ 1.568
Oklahoma....	19.7	− 1.7	2.89	4.54	+1.09	1.1881	− 1.836
Oregon.......	20.7	− .7	.49	2.39	−1.06	1.1236	+ .742
Pennsylvania..	15.7	− 5.7	32.49	4.14	+ .69	.4761	− 3.933
Rhode Island.	18.4	− 3.0	9.00	3.71	+ .26	.0676	− .780
S. Carolina...	30.7	+ 9.3	86.49	1.24	−2.21	4.8841	− 20.553
S. Dakota....	14.0	− 7.4	54.76	4.58	+1.13	1.2769	− 8.362
Tennessee....	17.4	− 4.0	16.00	3.24	− .21	.0441	+ .840
Texas........	27.6	+ 6.2	38.44	3.38	− .07	.0049	− .434
Utah.........	26.0	+ 4.6	21.16	1.75	−1.70	2.8900	− 7.820
Vermont.....	21.9	+ .5	.25	2.07	−1.38	1.9044	− .690
Virginia......	8.1	−13.3	176.89	2.65	− .80	.6400	+ 10.640
Washington...	14.2	− 7.2	51.84	4.33	+ .88	.7744	− 6.336
West Virginia.	16.1	− 5.3	28.09	2.60	− .85	.7225	+ 4.505
Wisconsin....	24.9	+ 3.5	12.25	2.92	− .53	.2809	− 1.855
Wyoming.....	16.1	− 5.3	28.09	6.24	+2.79	7.7841	− 14.787

The use of the lag to determine maximum correlation finds application in the study of business cycles and in the study of business barometers.

Pearson's coefficient of correlation is also of practical usefulness in connection with frequency series. It has been used by the Commonwealth Edison Co. of Chicago in connection with studies in the concentration of power supply. It was shown that a significant degree of correlation exists between the load factor and income per kw. hr., and the conclusion was drawn that income per kw. hr. goes down as the load factor improves with the lowering of selling prices. Table 28, reproduced from Secrist, shows how the calculations were made.

The standard deviation of the x and y series are, respectively, 9.39 and 1.95. According to Pearsons's formula,

$$r = \frac{\Sigma\,(x\,y)}{n\,\sigma_1\,\sigma_2}$$

$$= \frac{-\,444.735}{860.593}$$

$$= -\,0.517$$

The probable error is $\pm.0721$; therefore the correlation is significant.

PROBABLE ERROR OF COEFFICIENT OF CORRELATION.—The probable error of the coefficient of correlation is found by multiplying the coefficient of correlation by $\frac{1 - r^2}{\sqrt{n}}$. According to Bowley, the standard deviation, to be significant, must be not less than six times the probable error. Significance can be attached to the probable error, however, only in case of normal distributions.

Diagrammatic Presentation

DEFINITION.—Graphic charts are used for a variety of purposes. A. C. Haskell outlines the principal functions of charts as follows:

1. Computation (mechanical)
   - Arithmetical and geometrical calculations
   - Interpolation
   - Calibration
   - Integration
2. Tabulation
   - Statistical comparisons
3. Plotting
   - Sketches
   - Maps
   - Stadia surveys
   - Organization plans, location of buildings and machinery
4. Recording
   - Filing
   - Blue-printing
   - Photographic reproduction
   - Statistical comparison
5. Demonstration
   - For instruction
   - For advertising
6. Statistical prediction
   - Weather
   - Population
   - Vital statistics, etc.
7. Notations
   - Field notes

Statistical comparison occupies a large place in this field. Several important varieties of graphic methods used to make statistical comparisons have been developed. These are roughly classified as diagrams and graphs. Diagrams in turn may be classified into: (a) those used to show frequency or magnitude alone, and (b) those used to show frequency or magnitude in relation to geographical distribution. Diagrams which fall under (a) are

known as **pictograms.** Graphs are the plotted curves of mathematical equations, and are employed where two variable factors are to be expressed one of which is said to be the function of the other.

DIAGRAMS.—For the purpose of showing frequency or magnitude alone, lines and bars are preferable to surfaces and volumes because the latter are more difficult to interpret by observation. In case of surfaces, dimensions vary as the square roots of the areas. In case of solids, dimensions vary as the cube roots of the volumes. When bars and lines are used, the amounts represented vary as the length of the bars and lines; consequently it is necessary to interpret but one dimension. The only equipment necessary for the construction of charts are a straight edge and a pencil or pen. Avoid methods which give false pictures of the facts to be presented. Some methods of shading and cross-hatching cause optical illusions. These should be

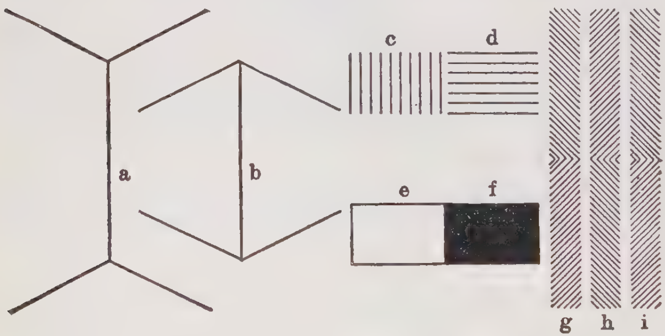


Fig. 12. Optical Illusions Illustrated
(From A. C. Haskell, "How to Make and Use Graphic Charts")

avoided. In Fig. 12, taken from Haskell's "How to Make and Use Graphic Charts" (p. 55), line *a* appears to be longer than *b*, but they are equal. The shaded area *c* looks wider than *d* but they are of equal width. The white area *e* looks larger than the black area *f*, but they are equal.

PAPER TO USE.—In so far as possible, standardize the size of sheet, lettering, titles, etc., employed. Sheets of standard letter-head size, 8½ by 11 inches, or multiples thereof, such as 17 by 11, will be found convenient for most purposes. Rulings on an 8½ by 11 inch sheet usually measure 7½ by 10 inches, leaving margins of ¾ inch at the top and left, and ¼ inch at the bottom and right, thus allowing room for lettering, binding, making of notes, etc. If copies of the chart are to be made, translucent paper should be used to permit the making of blue-prints. Either onion-skin paper, glazed or unglazed, or a high grade of light-weight bond paper may be used. The latter prints well and stands erasures better than onion-skin paper. To keep the sheets clean and smooth, secure them in bound pads. For ruling use olive green ink which is easier on the eyes than more brilliant colors. Where the chart is made primarily for producing blue-prints, use black drawing ink,

Table 29. Report of Consumers connected—1915-1914

Month	1915	1914	Variation	
			Increase	Decrease
January	38	18	20	..
February	50	43	7	..
March	45	52	..	7
April	75	80	..	5
May	99	93	6	..
June	37	49	..	12
July	74	33	41	..
August	53	24	29	..
September	75	39	36	..
October	55	50	5	..
November	32	25	7	..
December	50	30	20	..
Total	683	536	171	24
			147	

CONSTRUCTION OF DIAGRAMS. Since one of the first considerations in chart-making is clearness, carefully key or letter all parts of it so that there can be no misunderstanding regarding its meaning. Each sheet should be given a carefully worded title showing what the chart or diagram represents and any references that may be necessary to indicate authorities, etc. The following illustrations of graphic charts are reproduced from an article by Stanley C. Tarrant, in *Gas Age*, Jan. 1, 1917. Although made to illustrate gas company statistics, the methods involved are applicable generally. The use of the bar diagram to illustrate the statistics of Table 29 is shown in the three diagrams (Figs. 13, 14, 15).

Consider carefully the particular form of chart which will best fit the case under consideration before adopting any given one. The first of these charts (Fig. 13) is spectacular, but does not permit comparison of one year with another as readily as the other two charts do. On the other hand, the first chart shows the monthly trend better than do the other two, in which the monthly amounts are placed in juxtaposition. The third form (Fig. 15) has the advantage of making the monthly fluctuations stand out prominently. The bar chart is easily understood and can be used to advantage where the variety of data to be represented is not too great or too complicated.

In the following figure (Fig. 16), also taken from *Gas Age*, are shown three forms of growth charts, the block, step, and peak top curve. The last chart of this group is simplest in form and is probably the easiest of the three to read.

Diagrams intended to show the relationship between magnitude or frequency and geographical distribution, are known as **cartograms** and when properly used they are much superior for that purpose to any form of tabular presentation, because they bring out comparisons and contrasts which

tables do not. Like other graphic methods, they are simple aids to the understanding and in no way displace the data upon which they are based. There are three general types of statistical maps, viz.: (*a*) those in which colors are employed to indicate frequency; (*b*) those in which frequency is illustrated by relative density of cross-hatch; and (*c*) those in which frequency or density is indicated by means of dots. Of these three kinds of maps, those requiring coloring are for most purposes the least satisfactory, both on account of the expense involved and on account of the difficulty of making changes in coloring represent facts. Unrelated colors should not be used except where there exists no relationship in point of fact between the various classes of data to be represented. Usually colors should be confined to

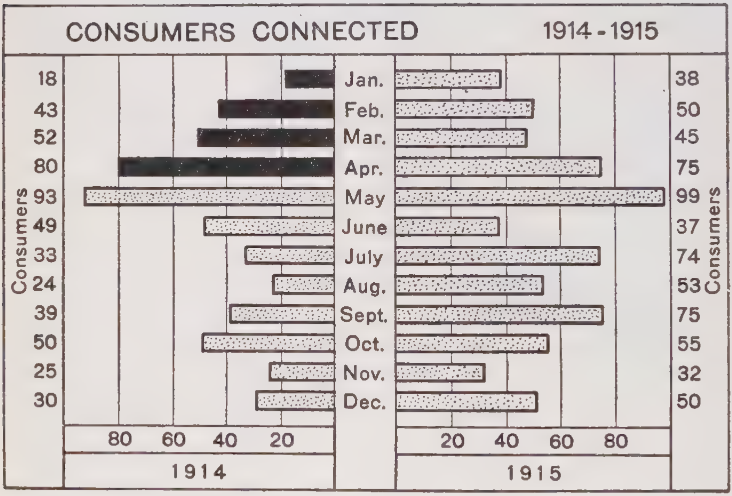


FIG. 13. Horizontal Bar Method (Based on Table 29)
(From A. C. Haskell, "How to Make and Use Graphic Charts")

varying densities of the same color. If the number of shades is too great to be represented satisfactorily in this way, two colors, such for example as red and blue, may be used, the deepest tints of each being used at the extremes of the series and each being shaded down to an almost white color where the two join.

An illustration of cross-hatching is shown in the map (Fig. 17, p. 759), reproduced from the "Abstract of the Thirteenth Census of the United States." Maps of this type are valuable in studies of population density, land values, etc. In maps of this type shades range from white to black. Extremes in the range of statistical data should be represented by extremes in shades. The more typical conditions should be represented by medium shades. The number of groups of data determines the number of shades to be employed. Groups to be represented should be of uniform width. This principle is not consistently followed in the accompanying map. The width of the groups determines the number of shades to be used. Choice

of shades is of less importance than having each shade represent equal width of groups. When the facts to be presented by means of different shades of cross-hatch are unrelated, the shades need not be related.

It is extremely important to remember that the use of both color and cross-hatch diagrams is limited to data of the discrete type, because distri-

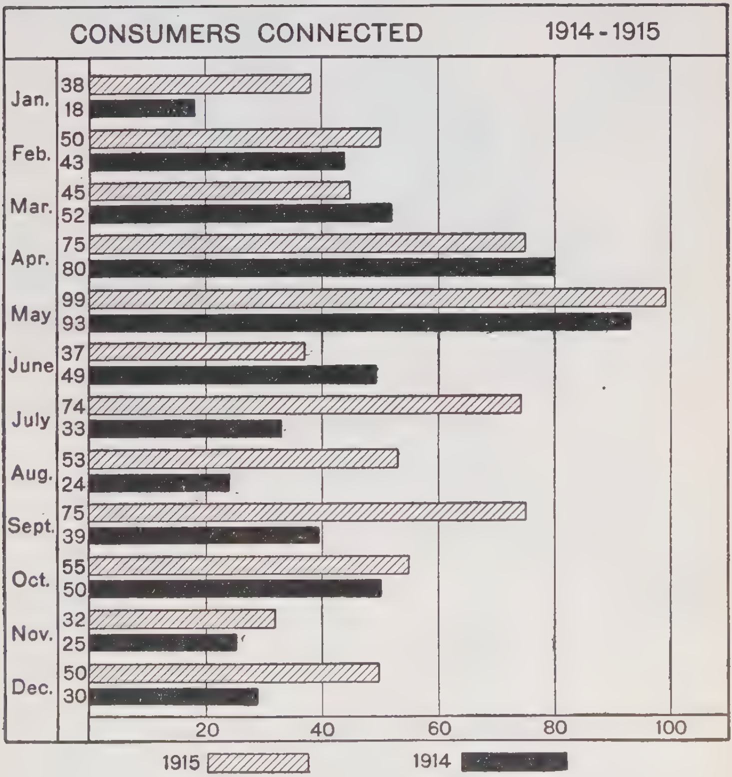


Fig. 14. Paired Horizontal Bars (Based on Table 29)
(From A. C. Haskell, "How to Make and Use Graphic Charts")

bution within areas represented by a given shade appears to be perfectly even, while abrupt changes appear at the boundary lines. Where it is necessary or desirable to show gradual change from less to greater density, these methods are useless. In speaking of population per square mile by states, it is considered that there should properly be sudden breaks at boundary lines. When it is necessary to show distribution within districts and without reference to arbitrary boundary lines, the dot map should be used.

There are three classes of dot maps: (a) those in which the dots range in size according to the range in amount or density to be represented; (b) those

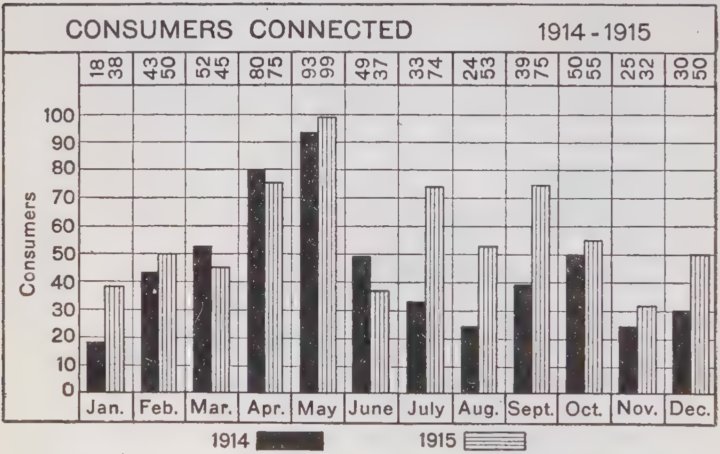


Fig. 15. Vertical Bars Arranged in Pairs (Based on Table 29)
(From A. C. Haskell, "How to Make and Use Graphic Charts")

in which the dots are of equal size but are shaded to indicate different values; and (c) those in which the dots are small and of equal size and shade, and

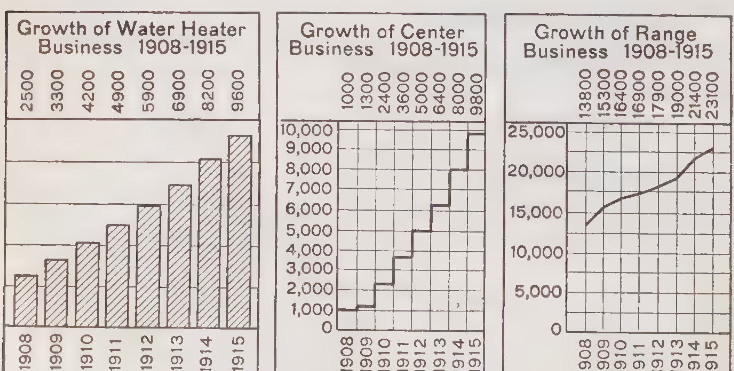


Fig. 16. Forms of Growth Charts
(From A. C. Haskell, "How to Make and Use Graphic Charts")

in which varying values are represented by varying density of dots. Illustrations of these three types of dot maps are shown in Figs. 18, 19, 20.

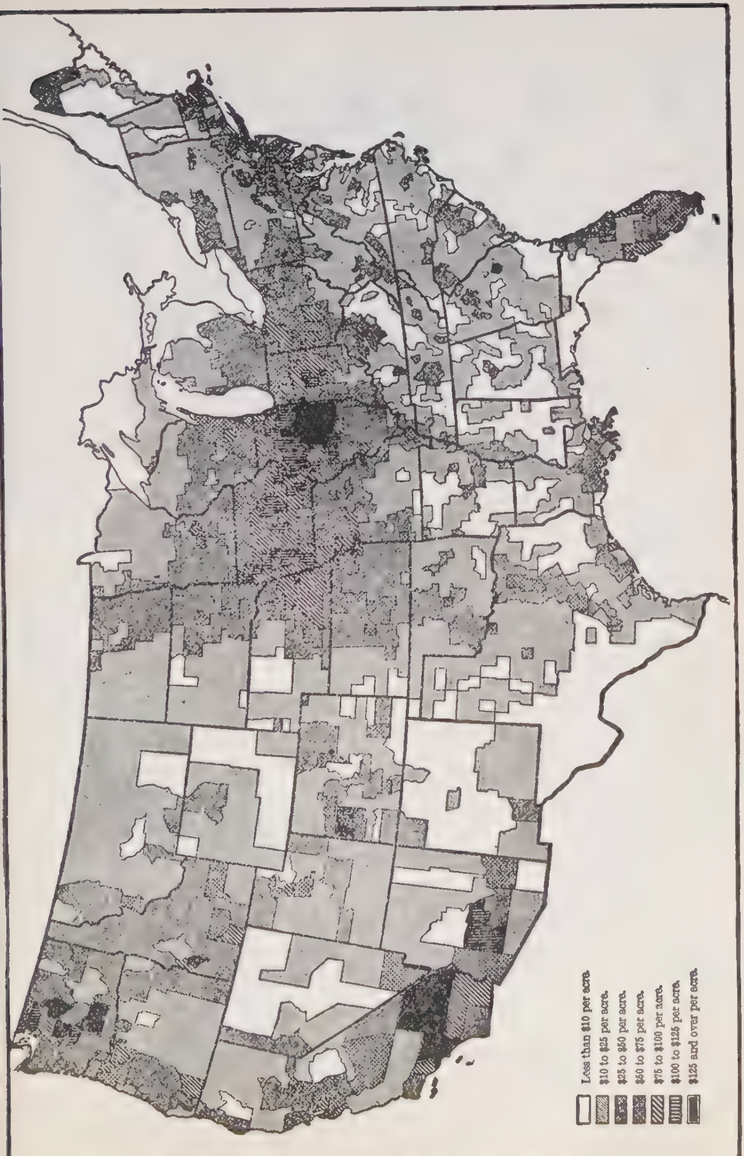


FIG. 17. Average Value of Land in Farms in U. S. per Acre, by Counties, in 1910
(Abstract of the Thirteenth Census of U. S., 1910)

FIG. 18. Relative Distribution in U. S. of Cattle Other than Dairy Cows
(From *Country Gentleman*)

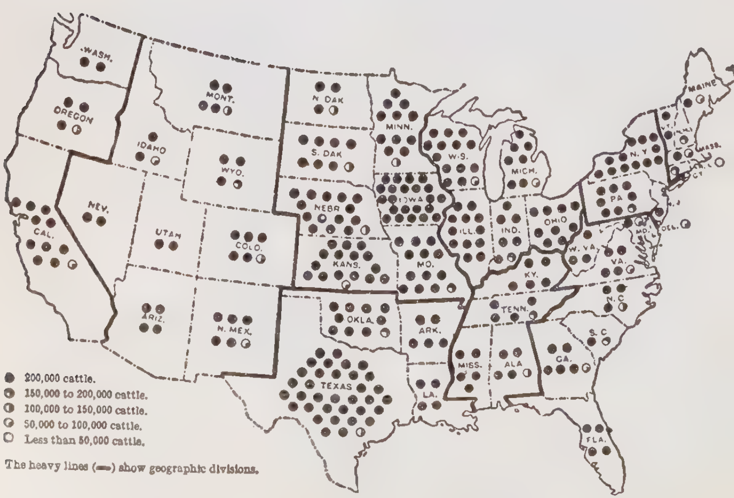
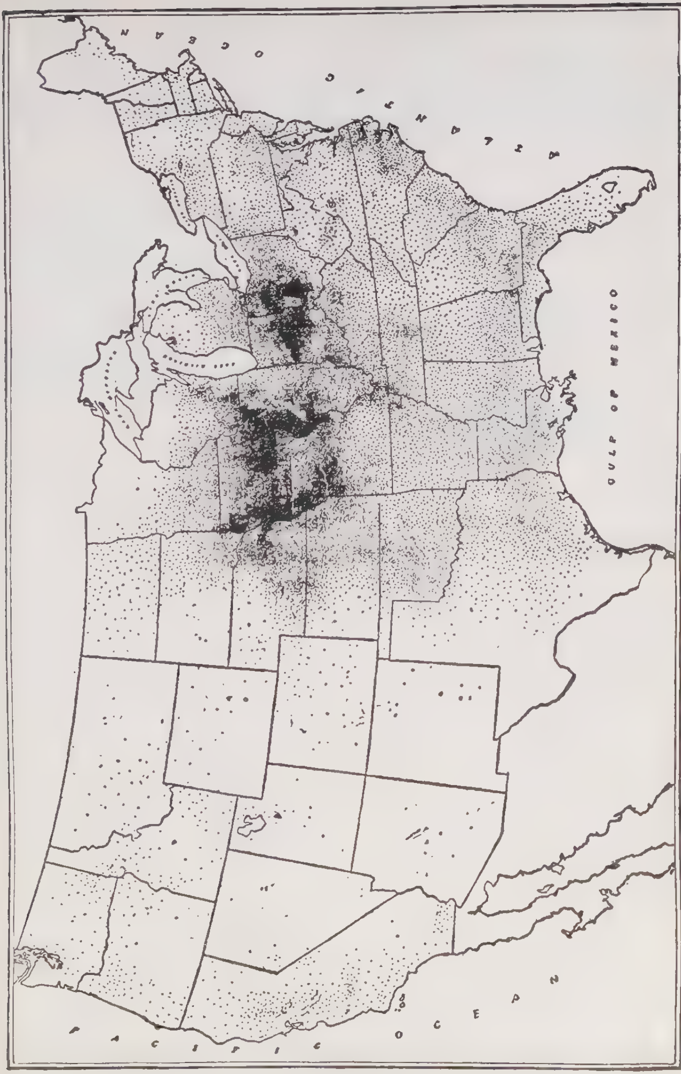


FIG. 19. All Cattle on Farms in U. S., by States, Apr. 15, 1910
(Abstract of the Thirteenth Census of U. S., 1910)



1 Dot = 2,500

Fig. 20. Number of Swine on Farms and Ranges, Apr. 15, 1910

The first type of map (Fig. 18) must be used with caution. It does not show absolute frequency and geographical distribution is shown only roughly. It is apt to be misleading because surfaces are used as bases of comparisons.

In case of the second type (Fig. 19) comparison between districts is more easily made because it is the number of dots instead of the size which serves as the basis of comparison. For most purposes cross-hatching is equally good as, if not preferable to, this method.

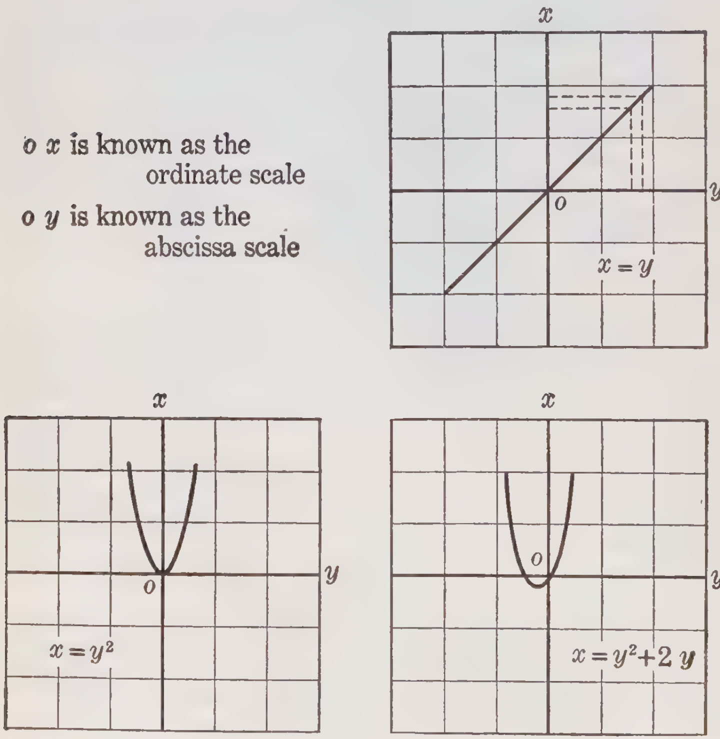


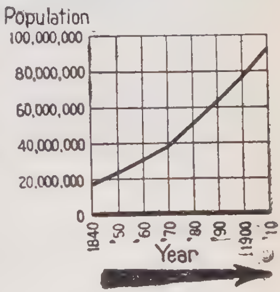
Fig. 21. Graphic Illustration of Equations

The third method of showing density and distribution possesses certain distinct advantages, especially where relative instead of absolute density is to be shown. Absolute frequency can be indicated only within rather broad limits, and usually it is not best to attempt to show it. It should be used where data of the continuous rather than the discrete type are to be shown. Boundary lines are ignored and political subdivisions are employed to enable the reader of the map to determine relative locations.

Graphic Presentation

DEFINITION.—Graphic presentation consists in the use of curves to show the relationship between two or more variable quantities. As much statistical data is either historical or frequency in character, so graphs may be used to show the occurrence of a series of events or a tendency during time, or it may be used to show the facts with regard to a variable condition as at a given point in time.

CONSTRUCTION OF GRAPHS.—Graphs are based upon mathematical principles and every curve has its corresponding equation in which x may be said to represent one variable and y the other. Three simple equations and their corresponding graphs are shown in Fig. 21.



(1)

For ordinary graphic work a knowledge of mathematics is not necessary. In case of frequency series it is customary to plot the units or quantities along the horizontal axis known as the **abscissa,** and the frequencies along the vertical axis, known as the **ordinate.** To secure the curve, extend lines at right angles from ordinate and abscissa until they meet, as shown by dotted lines in the first graph above. The meeting point of corresponding lines thus extended from ordinate to abscissa determines the curve. In case of continuous series the curve is properly smoothed to indicate the form it would take if the number of measurements were indefinitely increased. In case of discrete series it is better to connect the points of intersection of lines extended from ordinate and abscissa by straight lines, because the only purpose of the connecting line is to guide the eye of the reader. The essentials of graphic presentation have been embodied in a report by the committee on graphic presentation of the American Society of Mechanical Engineers. This is reproduced below.

(2)

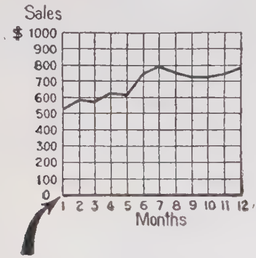
1. The general arrangement of a diagram should proceed from left to right.

2. Where possible, represent quantities by linear magnitudes, as areas or volumes are more likely to be misinterpreted.

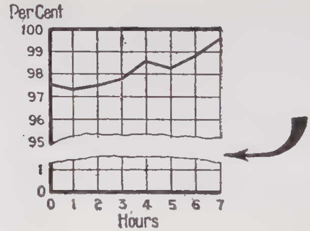
3. For a curve, the vertical scale, whenever practicable, should be so selected that the zero line will appear on the diagram.

4. If the zero line of the vertical scale will not normally appear on the curve diagram, the zero line should be shown by the use of a horizontal break in the diagram.

5. The zero lines of the scales for a curve should be sharply distinguished from the other co-ordinate lines.

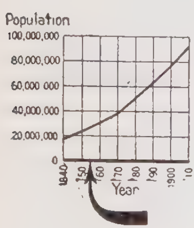


(3)

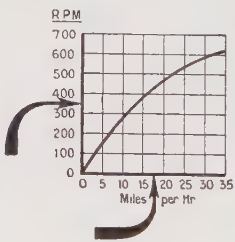


(4)

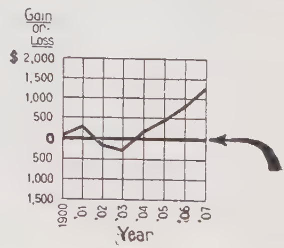
6. For curves having a scale representing percentages, it is usually desirable to emphasize in some distinctive way the 100 per cent line or other line used as a basis of comparison.



(5a)

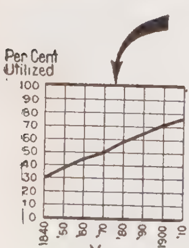


(5b)

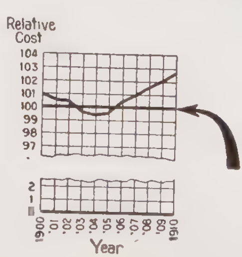


(5c)

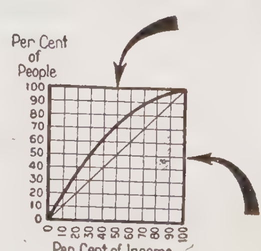
7. When the scale of a diagram refers to dates, and the period represented is not a complete unit, it is better not to emphasize the first and last ordinates since such a diagram does not represent the beginning or end of time.



(6a)



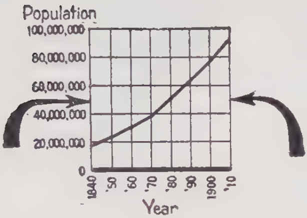
(6b)



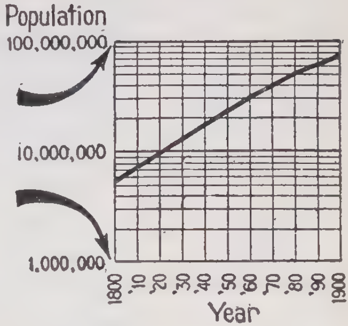
(6c)

8. When curves are drawn on logarithmic co-ordinates, the limiting lines of the diagram should each be at some power of ten on the logarithmic scales.

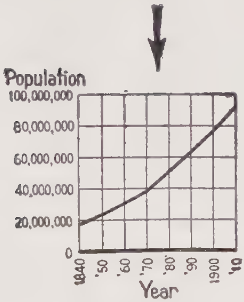
9. It is advisable not to show any more co-ordinate lines than necessary to guide the eye in reading the diagram.



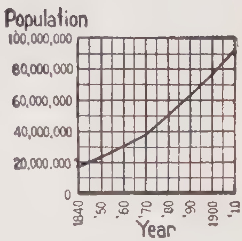
(7)



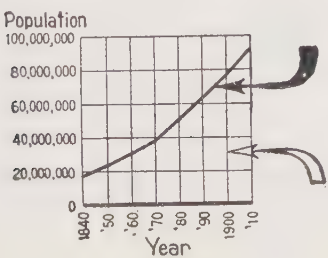
(8)



(9a)



(9b)

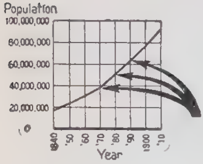


(10)

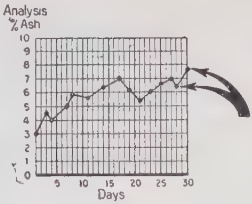
10. The curve lines of a diagram should be sharply distinguished from the ruling.

11. In curves representing a series of observations, it is advisable, when-

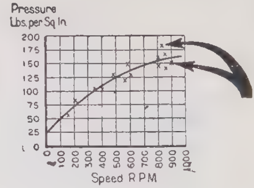
ever possible, to indicate clearly on the diagram all the points representing the separate observations.



(11a)

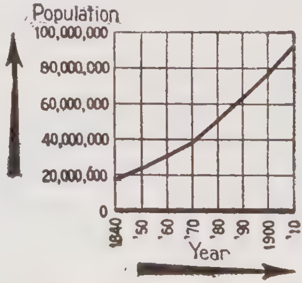


(11b)



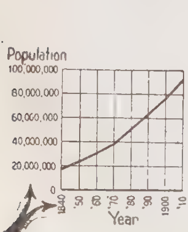
(11c)

12. The horizontal scale for curves should usually read from left to right, and the vertical scale from the bottom to top.

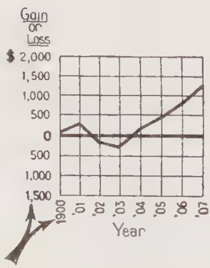


(12)

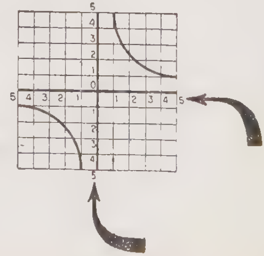
13. Figures for the scales of a diagram should be placed at the left and at the bottom, or along the respective axes.



(13a)



(13b)

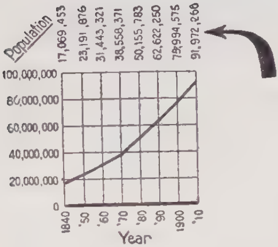


(13c)

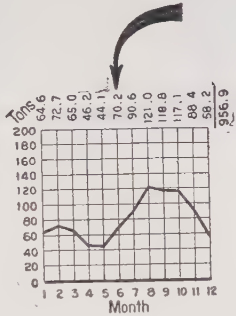
14. It is often desirable to include in the diagram the numerical data or formulæ represented.

15. If numerical data are not included in the diagram it is desirable to give the data in tabular form accompanying the diagram.

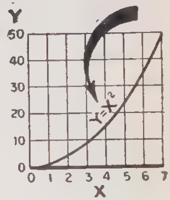
16. All lettering and all figures on a diagram should be placed so as to be easily read from the base as the bottom or from the right-hand edge of the diagram as the bottom.



(14a)

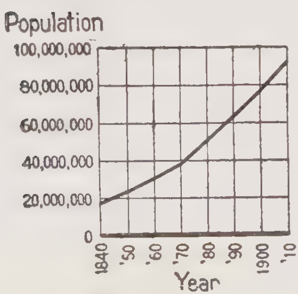


(14b)



(14c)

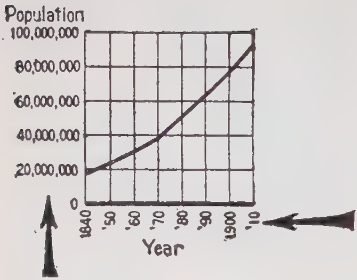
17. The title of a diagram should be made as clear and complete as possible. Subtitles or descriptions should be added if necessary to insure clearness.



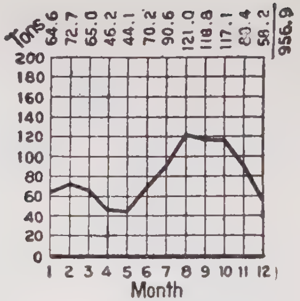
Year	Population
1840	17,069,453
1850	23,191,876
1860	31,443,321
1870	38,558,371
1880	50,155,783
1890	62,622,250
1900	75,994,575
1910	91,972,266

(15)

PLOTTING FREQUENCY SERIES.—In plotting frequency distributions, plot the measurements of the groups into which the series is divided. On the ordinate scale plot the frequencies which appear in the various groups. Ordinarily the points on abscissa and ordinate should be sep-

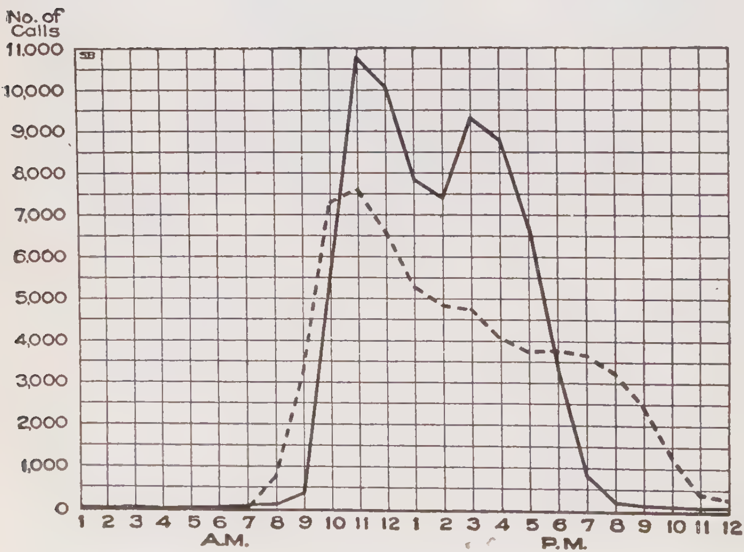


(16)



Aluminum Castings Output of Plant No. 2, by Months, 1915. Output is given in short tons. Sales of scrap aluminum are not included.

(17)



Data of N. Y. Edison Co.

FIG. 22. Number of Telephone Messages Each Hour for One Day in a Business District in New York City as Compared with a Residence District

Solid line, the "Broad" exchange—a typical business exchange.

Dotted line, the "Riverside" exchange—a typical residence exchange.

Note the great number of business calls after mail has been opened in the morning and after return from lunch. In the residence district there is much morning shopping by telephone.

(From W. C. Brinton, "Graphic Methods for Presenting Facts")

Table 30. Frequency Table Showing Results of Throwing Three Dice

No. of Spots (Size of Item) m	No. of Times Occurring (Frequency) f
4	1
5	4
6	11
7	10
8	24
9	22
10	22
11	32
12	17
13	23
14	9
15	7
16	7
17	4
18	3
	$n = 196$

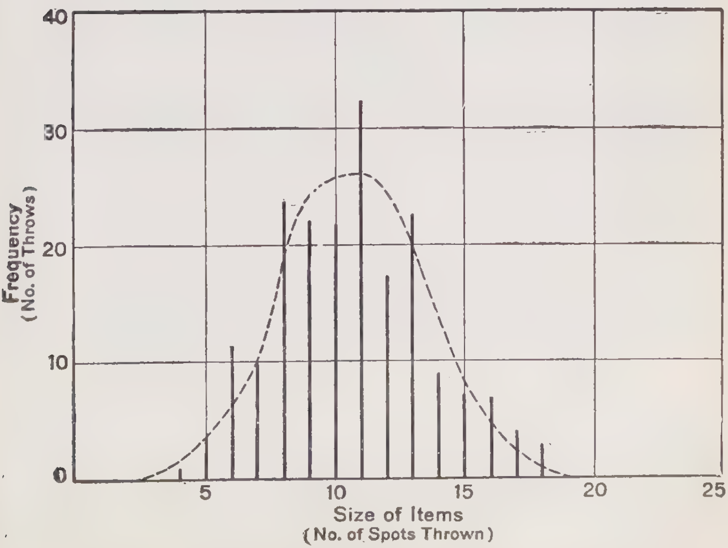
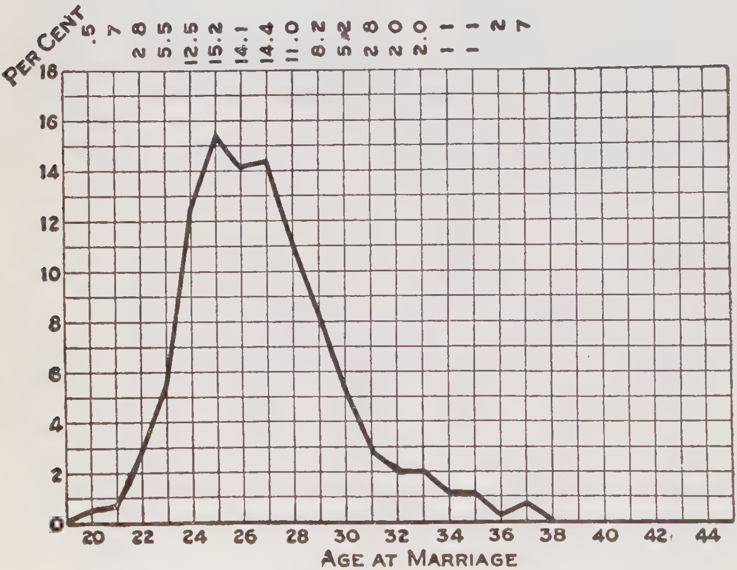


FIG. 23. Frequency Line Diagram (Based on Table 30)
(From W. I. King, "The Elements of Statistical Method")

arated by the same distance. Use judgment in determining the range of both measurements, that is, from ordinate and abscissa, in order to throw the graph into proper relief. If the ordinate scale is too short, the curve will be flattened too much. That part of the curve which shows the greatest rate of increase should be well inclined to the vertical, but all fluctuations must be clearly indicated. If co-ordinated paper is used, the scale points should correspond to the ruling. If paper is divided into tenths, the scale



Data of Amy Hewes, in Publications Am. Statistical Assn.

FIG. 24. Age at Marriage of 439 Married Graduates of Mount Holyoke College, who graduated from 1890 to 1909

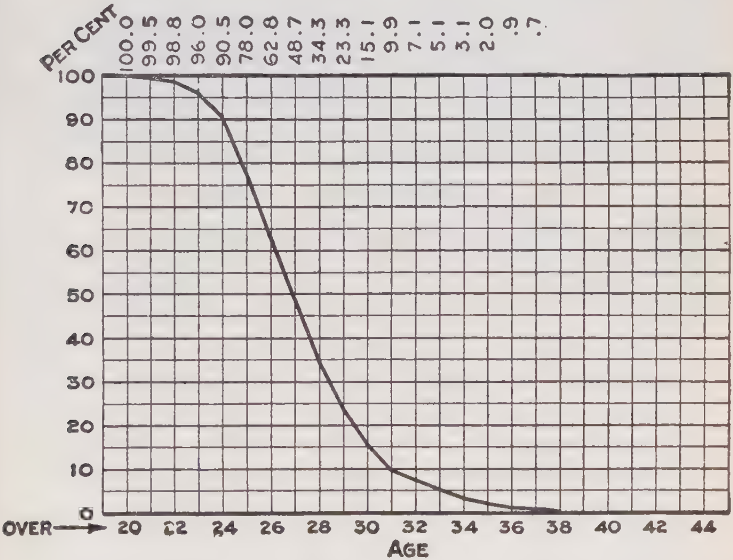
The vertical scale shows the percentage of the whole 439 who married at each age given on the horizontal scale. The total of all percentage figures at the upper margin of the chart is 100%. If a greater number of persons were included in a frequency curve of this sort, the curve would be less irregular and the mode would show more distinctly.

(From W. C. Brinton, "Graphic Methods for Presenting Facts")

points should correspond to that base whenever the scale consistent with the proper graphic presentation of the data can be so adjusted. See that the frequency groups to be represented are uniform in size. Frequency distributions are either discrete or continuous. In case of discrete series, units on the abcissa should be regarded as points, not spaces. For that reason lines connecting the ordinates — points of intersection of lines extended from ordinate and abscissa—should be straight, their function being to guide the eye. The graph (Fig. 22, p. 768) shows a frequency distribution for

the number of telephone messages each hour for one day in a business district in New York City as compared with a residential district.[8] Preferably the data should accompany the graph in tabular form. Note that the lines connecting ordinates are straight.

In case of frequency distributions describing continuous series, it is proper to curve the line connecting ordinates so that it approximates the line which



Data of Amy Hewes, in Publications Am. Statistical Assn.

Fig. 25. Percentage of 439 Married Graduates of Mount Holyoke College (Women), graduating 1890 to 1909, who married at ages greater than any specific age selected from the horizontal scale of the chart.

This is a cumulative frequency curve plotted from exactly the same data as Fig. 24. The word "over" with the arrow at the lower left-hand corner of the chart shows that the chart does not indicate the percentage who marry of any age but the number who marry later than any specific age read from the horizontal scale.

(From W. C. Brinton, "Graphic Methods for Presenting Facts")

would result were an indefinite number of measurements taken. The curve should be free from sharp angles. At each point the relative size of adjoining frequencies and the nature of the entire distribution must determine the contour. The above (Table 30) and graph (Fig. 23) are from King's "Elements of Statistical Method" (pp. 103, 104). The table shows the results of 196 throws of 3 dice. The graph shows the actual results, also a smooth curve which is an approximation to what could be expected if the

8 Reproduced from Brinton's Graphic Methods for Presenting Facts, p. 108.

number of throws were increased indefinitely. Although this series is not strictly continuous it illustrates the point under consideration.

Frequently it is desirable to plot frequency distributions in form of cumulative graphs, or ogives. The above figures (Figs. 24, 25), reproduced from Brinton's "Graphic Methods for Presenting Facts" (pp. 166 and 167), show the same data plotted as frequency and as cumulative graphs.

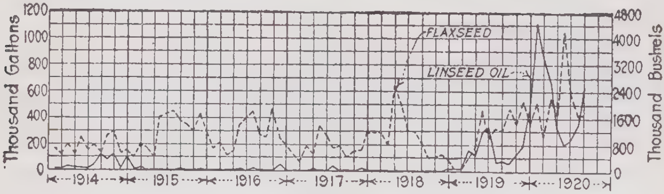


FIG. 26. The Imports of Flaxseed and Linseed Oil

PLOTTING HISTORICAL SERIES.—The principles to be followed are much the same as in case of frequency series. Time is a constant element. Short- and long-time tendencies must be brought out. The changes may be shown either as absolute or ratio differences (see pp. 745, 746). If absolute

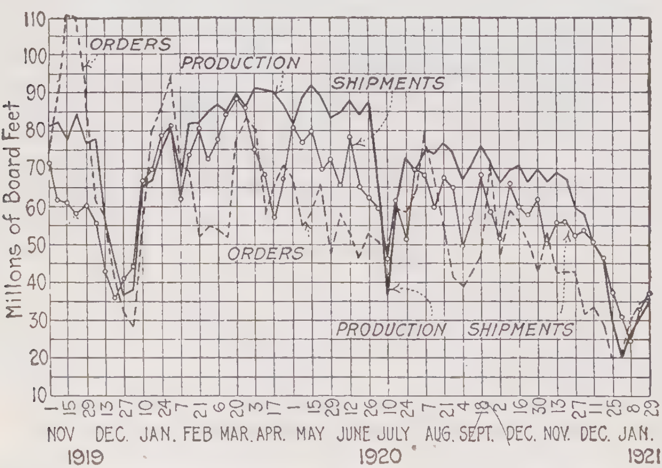


FIG. 27. Typical Chart of Production, Shipments, and Orders, over a Period of 15 Months

(From article by P. M. Marshall in *Management Engineering*, October, 1922)

differences are to be shown, study the extreme range of variations, then adopt a unit of measurement which will give the proper emphasis to fluctuations. The size of the paper used, the nature of the graph, its use, and so on, must be considered. Plot the variable factor on the ordinate and

time on the abscissa. Divide the scales into equal parts and see that the scale corresponds to the ruling of the paper used. If two or more curves are to be shown on the same sheet, it may be necessary to use different scales for them, as in the illustrations on pp. 745, 746. However, the use of more than one scale should be avoided, if possible. Another plan is to indicate the break by a wavy line drawn between the two curves parallel to the base. Above are two illustrations of historical graphs (Figs. 26, 27). The first (Fig. 26) shows the imports of flaxseed and linseed oil. The second (Fig. 27) shows a typical chart of production, shipments and orders, over a period of 15 months.

RATIO CHARTS.—Ratio charts and logarithmic charts are based on the same principle, viz., that increases and decreases are represented as percentages or ratios, not as absolute quantities. A knowledge of logarithms is

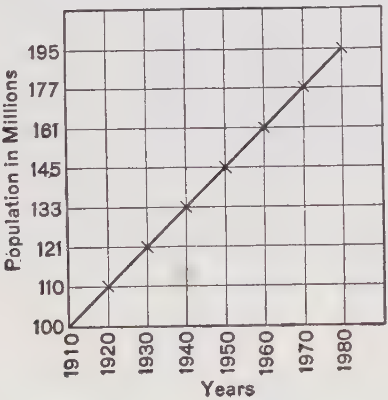


FIG. 28. Ratio Plotting

Uniformity is here evident to the eye, being represented by a straight line.

not necessary in the use of ratio or logarithmic charts. The fundamental principle of ratio charts is that equal vertical intervals on the charts represent equal **ratios** of increase, instead of equal amounts of increase. Ordinary plotting paper can be transformed into ratio plotting paper by labeling the existing lines and interpolating new lines. To do this, label the existing equidistant horizontal lines with numbers increasing in a given ratio, as shown in Fig. 28, reproduced from Professor Irving Fisher's "The 'Ratio' Chart."

Each interval of vertical space on this chart represents an increase of 10% over the next lower one. The same data shown on a difference chart, i.e., one in which equal spaces represent equal absolute amounts, are shown in Fig. 29. In the ratio chart uniformity in the percentage rate of growth is represented by a straight line, whereas in the ordinary difference chart uniformity in the rate of growth is represented by an exponential curve, which it is impossible to interpret accurately on a percentage basis. The

rising curve is apt to be interpreted as representing an increasing ratio. The difference between the ratio chart and the difference chart is merely one of spacing. In the ratio chart vertical spaces representing equal absolute amounts are unequally spaced, while in the difference chart they are equally spaced.

The actual growth of population in the United States from 1790 to 1910 is shown in Figs. 29, 30. The first chart (Fig. 29) is the ordinary or difference chart; the second one (Fig. 30) is the ratio chart. The rising curve on the difference chart does not represent an increasing rate of growth, but might be interpreted as such. The ratio chart shows a nearly uniform rate of growth from 1790 to 1860, and a slightly decreasing rate of growth since 1860.

Ratio chart curves are more easily compared than are difference chart curves. This is shown in the three charts (Figs. 31, 32, 33), which are reproduced from Fisher's "The 'Ratio' Chart." Fig. 31 shows a comparison of index numbers by the difference method. Apparently "all commodities"

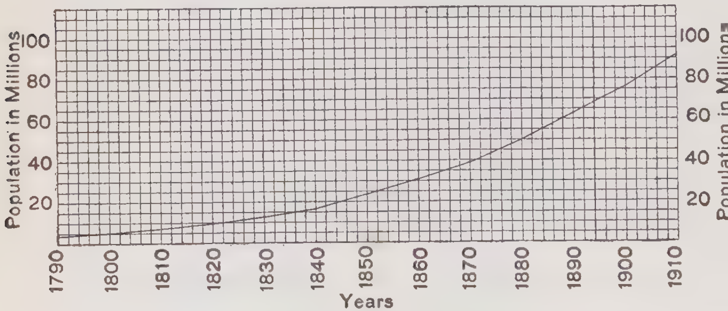


Fig. 29. Actual Population in U. S.—Difference Method
Showing the impossibility of correctly comparing rates of increase at different periods
(From I. Fisher, "The Ratio Chart for Plotting Statistics")

fluctuated more than "breadstuffs." In reality "breadstuffs" fluctuated more, as is shown by the second, or ratio, chart (Fig. 32). Fig. 33 brings out the comparison by bringing the curves close together, a procedure legitimate when the ratio method is used but not when the difference method is used. Business men are sometimes greatly surprised when they change difference charts into ratio charts.

The following summary is adapted from Professor Fisher's "The 'Ratio' Chart" (p. 23):

In ratio charts a straight line represents a constant percentage rate of increase or decrease. A curve indicates a changing rate of increase or decrease. Two parallel curves represent the same ratios of increase or decrease. Curves not parallel represent differing ratios of increase or decrease. When numbers to be plotted are halved or changed in any other ratio, the direction of the resulting curve will not be changed. The curve will simply be raised or lowered. There being no base line, no waste results on its account, and the diagrams can be cut off close, both above and below the curve. The necessity of reducing original data to index numbers is avoided.

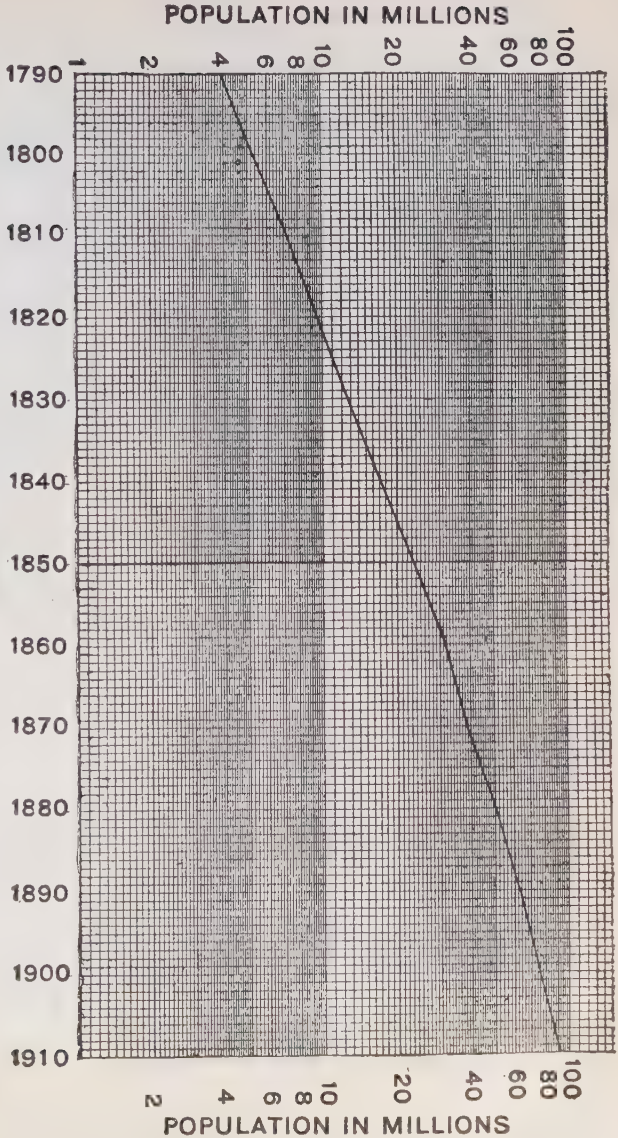


Fig. 30. Actual Population of U. S.—Ratio Method
Showing clearly the slight deviations, since 1860, from a uniform rate of growth.
(From I. Fisher, "The Ratio Chart for Plotting Statistics")

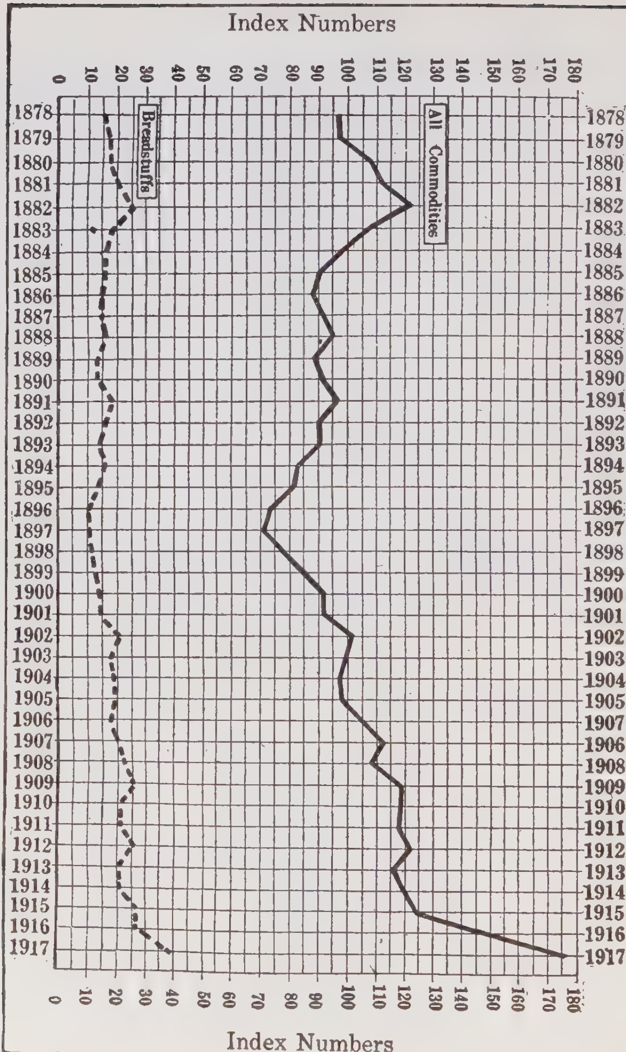


FIG. 31. Index Numbers Compared—Difference Method

Apparently, "all commodities" fluctuated more than "breadstuffs."

(From I. Fisher, "The Ratio Chart for Plotting Statistics")

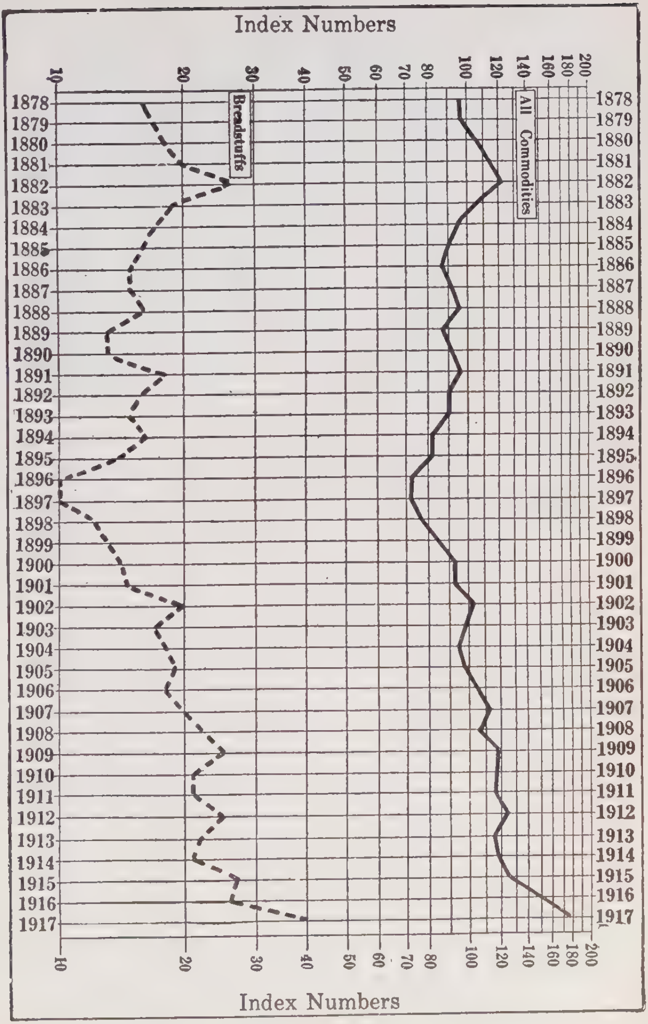


FIG. 32. Index Numbers Compared—Ratio Method

Actually, "breadstuffs" fluctuated more than "all commodities."

(From I. Fisher, "The Ratio Chart for Plotting Statistics")

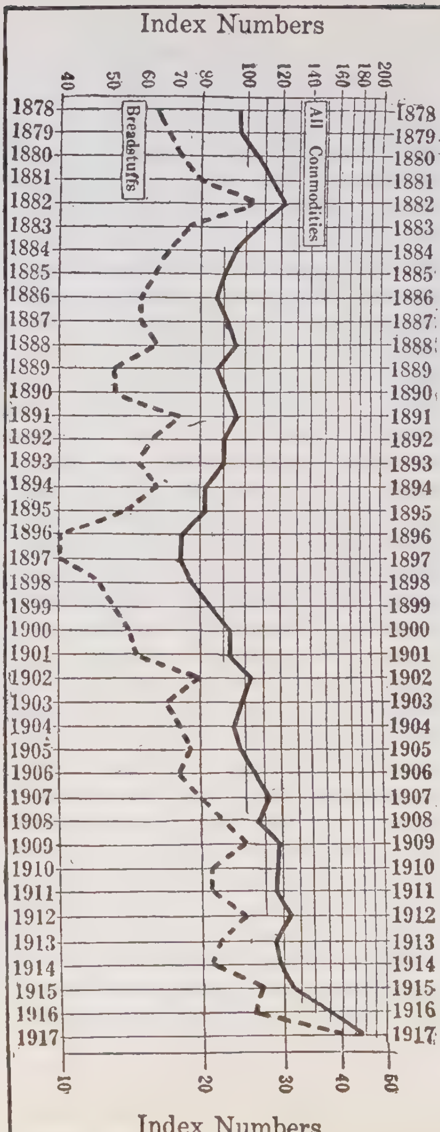


FIG. 33. Index Numbers Compared—Ratio Method

Showing more sharply the contrast by bringing the curves closer together. This procedure is legitimate in the ratio method, but not in the difference method.

(From I. Fisher, "The Ratio Chart for Plotting Statistics")

Internal Financial Statistics

COMPARATIVE RECORDS.—Comparative records may be kept for nearly every form of activity. The trend of sales and profits by departments and for the entire enterprise, activity of salesmen, inventories carried, and other phases of business enterprise, may be compared by means of statistical tables and graphs. Percentage as well as absolute quantities are useful, because they show relative increases and decreases.

OPERATING AND FINANCIAL STATISTICS.—Certain financial statistics should be planned and developed to support and explain the income statement and the balance sheet. Likewise **account classifications** should be in co-ordination with these statements. In this way the accounts and statistics are co-ordinated. Statistics intended for use of executives should measure relationships, and so should represent analyses of data supplied by the accounts. **Operating statistics** are those developed, in part at least, to support and explain the income statement. They should show on their face all important analyses. **Financial statistics** are those developed, in part at least, to support and explain the balance sheet.

Operating and financial statistics are usually presented in either **report** or **progressive** form. By the report form is meant that used to afford comparisons with previous periods. By the progressive form is meant an open, running file, in which the current periods figures are entered as available, thus permitting study of broken trends. This method is applicable to most forms of statistics from balance sheet down and has distinct advantages. In the following illustrative plan (Table 31) the first columns show progress by weeks and the last columns show accumulations to date. The plan is applicable to sales, expenses, earnings, etc.

Table 31. Sales—Department M

Weeks	By Weeks				Year to Date			
	Weight		Amount		Weight		Amount	
	1922	1923	1922	1923	1922	1923	1922	1923
Jan. 7..........								
Jan. 14..........								
Etc............								

Study of operating and financial statistics should be made from the point of view of the balance sheet and income statement, because these show the major trends and relationships, and statistical analysis is applied to bring to light facts not discernible in these general statements although forming parts of the general information reflected in them. Thus if the final results indicated by the income statement are unfavorable, statistical analysis of the items found in it will bring to light the source of loss.

SALES STATISTICS.—Those most commonly kept are for daily, weekly, and monthly sales by departments and by salesmen. Prepare columns to

show increases and decreases by both quantities and percentages. Cumulative figures to date may be shown, and averages may be reduced to percentages. The combinations desirable must be determined by the nature of the business and the information needed. Following are simple forms of statistical records.[9]

Table 32. Monthly Record of Sales by Departments

Months	Dept. 1	Dept. 2	Dept. 3	Dept. 4	Dept. 5	Total
January	$1,327.76	$2,976.47	$4,567.34	$3,091.23	$5,684.92	
February	1,094.25	3,462.45	4,809.67	2,890.67	5,892.43	
March	1,213.06	3,126.87	5,003.29	2,901.56	6,045.42	
April	1,164.36	3,879.65	4,782.54	2,875.69	5,587.67	
May	1,086.79	2,580.56	4,347.83	2,784.35	5,469.57	
June	987.57	2,784.66	4,476.21	2,783.52	5,472.31	
July	975.64	2,564.43	4,357.81	2,569.58	5,216.49	
August	976.56	2,376.65	4,235.68	2,467.92	5,127.65	
September	1,234.43	3,107.52	4,460.34	2,984.62	5,436.53	
October	1,321.26	3,245.63	4,532.25	3,012.56	5,542.32	
November	1,109.60	2,895.64	4,463.38	2,982.29	5,463.38	
December	1,437.87	3,256.76	4,987.56	3,248.90	5,873.24	
Total						

Table 33. Comparative Daily Record of Sales by Departments

Week beginning..........

Dept.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Total	% of Grand Total
I	$1,321 76	$1,210.34	$1,040.30	$1,243.65	$1,121.09	$1,324.65		
II	987.56	1,324.65	2,134.67	1,432.46	1,253.54	1,421.78		
III	1,276.41	2,109.72	1,967.73	1,563.27	2,136.76	1,038.08		
IV	2,107.63	2,371.10	1,986.78	2,083.52	2,376.82	2,171.19		
V	987.64	1,097.47	897.74	1,107.27	985.71	1,207.24		
VI	3,217.78	3,241.36	3,269.91	2,987.21	3,009.21	3,218.18		
Total								
% of Grand Total								

[9] These tables taken from Edgerton's Business Mathematics, Ch. I.

Table 34. Comparative Monthly Record of Sales

Salesman's Number	First Week	Second Week	Third Week	Fourth Week	Total	% of Grand Total
1	$350.65	$567.87	$436.65	$654.43		
2	456.76	765.53	876.65	465.35		
3	387.57	476.53	587.76	745.36		
4	341.25	675.83	436.54	456.76		
5	324.43	546.67	478.35	765.28		
6	678.93	468.59	359.48	468.75		
7	426.47	578.64	658.47	536.28		
8	276.34	527.35	621.34	438.27		
9	576.27	364.14	713.26	465.27		
10	264.64	475.37	718.88	635.47		
Total						

Table 35. Comparative Sales for Corresponding Days of Two Years

Dept. No.	Sales, Wed. Dec. 4, 1919	Sales, Wed. Dec. 3, 1920	Increase	Decrease	% of Increase	% of Decrease
1	$1,052.37	$1,781.65				
2	1,342.54	1,254.46				
3	1,254.32	1,324.56				
4	1,576.57	1,456.53				
5	2,564.34	2,657.62				
6	465.76	512.35				
7	1,467.43	1,547.25				
8	1,564.37	1,652.48				
9	1,231.12	1,235.65				
10	1,357.48	1,469.51				
Total						

Table 36. Monthly Sales of a Number of Clerks

Clerk's Number	Sales	Per Cent of Average
350	$1,256.43	
351	1,356.87	
352	1,124.34	
353	1,067.27	
354	987.56	
355	1,246.47	
356	1,456.32	
357	1,245.36	
358	1,034.75	
359	975.86	
360	1,326.52	
361	1,137.63	
362	1,364.37	
Total		
Average		

Table 37. Sales and Returned Goods by Departments

Year ending..........

Dept.	Sales	Returned Goods	Net Sales	% of Sales Returned
1	$ 25,431.76	$ 768.63		
2	48,976.53	876.52		
3	76,432.56	1,097.57		
4	98,742.27	1,210.78		
5	67,834.62	895.68		
6	110,532.65	873.45		
Total				

Table 38. Individual Daily Sales Sheet

Section 13, Dry Goods Date, May 11, 19—

Clerk's Number	Gross Sales	Returned Goods	Net Sales	Checks	Average Net Sales Per Check
121	$312.67			121	
122	413.36	$ 6.75		136	
123	215.23			97	
124	318.56	11.23		118	
125	456.78			124	
126	235.67	8.79		79	
127	102.46	1.78		81	
128	189.67	2.34		104	
129	213.53	3.21		115	
130	346.76	9.56		121	
Total					

Table 39. Comparison of Sales by Corresponding Months

Salesman, John Doe

Month	Sales Last Year	Sales This Year	Increase	% of Increase	Decrease	% of Decrease
January	$356.76	$430.12	$73.36	20.6		
February	456.87	515.60				
March	345.65	356.45				
April	450.10	390.50				
May	287.65	324.36				
June	231.90	245.87				
July	450.65	467.54				
August	346.75	356.52				
September	436.47	420.75				
October	567.35	580.67				
November	478.56	487.64				
December	564.32	545.53				

Table 40. Salesman's Cumulative Record of Sales by Departments

Salesman, H. Williams

Dept.	January	February	Total 2 Months	March	Total 3 Months	April	Total 4 Months
1..........	$ 546.56	$ 348.76		$ 435.65		$ 350.46	
2..........	768.56	756.46		675.87		763.54	
3..........	876.45	983.24		875.45		865.73	
4..........	1,134.76	1,234.58		1,346.43		1,265.87	
5..........	1,056.87	1,121.09		1,234.57		1,364.24	
Total..							
Average ..							

External Financial Statistics

GENERAL STATEMENT.—A great amount of financial statistical material is now collected by various governmental and private agencies. Proper attention to this material will often aid business men to determine what policy to adopt relative to future operations.

BAROMETRICS.—Barometrics makes use of statistics to forecast business conditions, tendencies in the prices of commodities, stocks and bonds, and so on. Well-known agencies such as Babson's and Brookmire's provide a regular service to which thousands of business men subscribe. Several journals have statistical departments given over wholly or in part to barometrics. Among these are the "Annalist" (published by the *New York Times*) and "Conditions and Prospects in Business and Industry," by Lewis H. Haney, in *Management and Administration* (published monthly by the Ronald Press Co.). The accompanying chart and explanation (Fig. 34) are reproduced from September, 1923, number of *Management and Administration.* It shows the manner in which this type of barometer operates.

THE BUSINESS CYCLE.—Barometrics attempts to forecast the business cycle, which is the more or less regular recurrence of periods of prosperity and depression. There are a number of monthly indices of industrial and commercial activity which reflect business conditions. Certain of these serve as forecasters because they act in advance of those movements which, taken together, constitute prosperity. Reliance should never be placed on any one series of statistics as an index of conditions, and special care should be taken always to discount the effects of abnormal circumstances, such as a war. In the autumn of 1919 statistics of pig-iron production were useless because of labor difficulties. In 1920 the disorganization of the railroad system made railway statistics unreliable guides to conditions. It is better to use an average, giving due weight to the various factors. The Harvard Committee on Economic Research has classified the principal business indices in accordance with the promptness with which they respond to changed conditions. Three series resulted:

1. Those reflecting speculation.
2. Those reflecting business activity.
3. Those reflecting banking conditions.

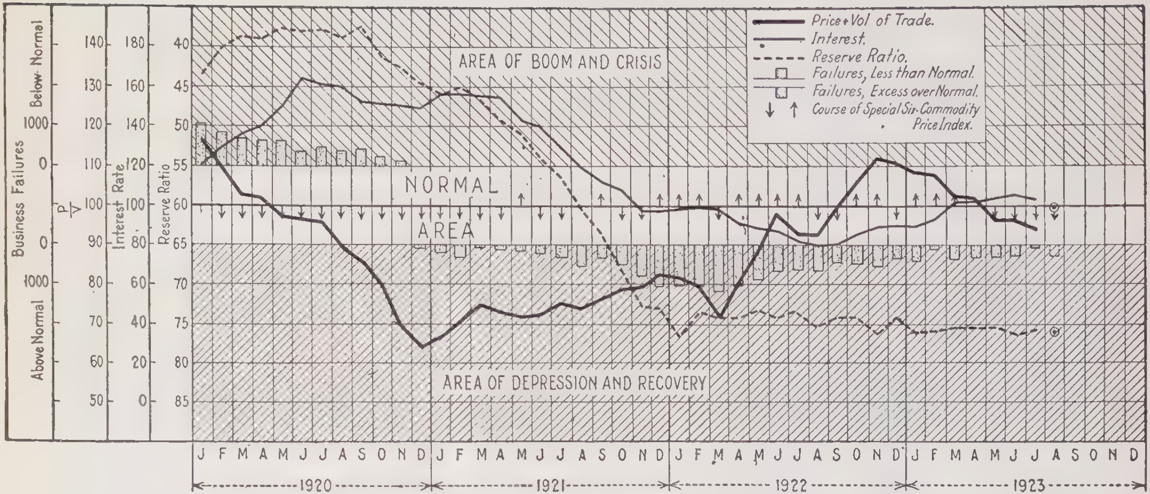


FIG. 34. The Barometer of Industry and Trade

Areas in which curves lie indicate that business is good, normal, or poor, respectively. Curve P/V shows the trend of commodity demand and is the ratio between Bradstreet's index of wholesale prices and physical volume of trade (carloadings times tons per car), based on 1912 as the normal year. A rise in the curve indicates increasing demand, and vice versa. Interest rate curve has been corrected for seasonal variation, and index number 100 equals 5%. Federal reserve ratio of cash reserves to note and deposit liabilities is inverted to harmonize its indications with the rest of the curves, and is corrected for seasonal variation on revised basis from January, 1923, on. Business failure bars are based on Dun's reports, and "normal" equals the trend for 40 years. Six-commodity price index based on N. Y. U. Bureau special investigation. August, 1923, data shown is probable trend.

(Taken from article by Lewis H. Haney, in *Management and Administration*, September, 1923)

SECTION 16

FINANCE

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 16.

FINANCE

Forms of Business Organization

DEFINITION.—As used in this section the term **finance** covers the obtaining and handling of funds by business enterprises and the various details of handling money and credit. To carry on business it is necessary to raise capital both for plant and working purposes; to determine profit and loss and its resulting effect on capital; and to determine policies regarding dividends, reserves, and upkeep.

RELATION OF FINANCE TO ACCOUNTING.—Proper financing is dependent upon correct accounting for the information needed for determining policies. Among topics which relate to both accounting and finance are depreciation, treatment of reserves, good-will, valuation, handling of sinking funds and redemption of various obligations. Accountants are frequently asked to give advice regarding methods of borrowing, investing, surplus distribution, etc. Accounting records past transactions, whereas finance deals with the obtaining of certain results, such as raising funds, issuing securities, and use of proceeds thus obtained.

TYPES OF BUSINESS ORGANIZATION.—The three fundamental types of business organization are: (1) **sole proprietorship,** in which an individual owns and manages his own business; (2) **partnership,** in which there are two or more owners working together under an agreement; (3) **corporation,** in which several or many individuals associate themselves under a more or less formal organization specifically sanctioned by general state laws or by special legislation. The corporation is the product of modern industrial conditions. Whereas sole proprietorships and partnerships are largely personal in nature, the corporation is more formal and contains much in its method of control that is impersonal.

Under any form of organization there are three elements to be distributed, viz., risk, income, and management. Under sole proprietorship and partnerships the owners assume the risk, take the income, and do the managing. Under the corporate form the situation is different. Creditors and shareholders assume the risk and divide the income according to some more or less complicated form, but the management is delegated to officers and directors. Thus the ownership and management of capital is in different hands.

Sole proprietorships are the simplest forms of business organization. Illustrations are found in firms, shops, the professions, etc. Ownership and management are in one man. There are some large businesses still in form of sole proprietorships, having started as small concerns. Informality and freedom from legal restrictions are advantages found in sole proprietor-

ship. Disadvantages are: limited supply of capital, actual or potential; lack of experienced executive ability; and personal liability of the proprietor.

Partnerships, fundamentally, are like sole proprietorships. The chief difference is that risk, income, and management are distributed among several persons instead of being centered in one. The **partnership agreement** is the contract to which the partners are parties. The number of possible partners is unlimited. A **sleeping partner** is one not known publicly to be a partner. A **limited partner** is one whose liability is limited to the amount of his investment. Special forms of partnerships are found in **syndicates** and **joint ventures.**

Professional activities are usually carried on as partnerships. In certain other activities where the unlimited liability feature of partnerships is desirable, the partnership form of organization is retained. Examples are brokers and underwriters.

The chief defects of partnership organization are unlimited liability and limited command on capital.

In partnership the **personal element** is a consideration of great importance and perhaps increases with the increase in number of partners. Each partner's fortune is dependent upon the behavior of all the other partners.

In case of **corporations** capital is supplied by the stockholders and management by officers and directors whom the stockholders elect. The stockholders thus exercise control indirectly. Their liability is limited to the amount of capital they contribute. Division of capital into **shares** makes wide distribution of ownership easy. The corporation is a distinct legal entity capable of suing and being sued, making contracts, etc., all operations being carried on by the officers in the name of the corporation.

Limited partnerships are formed under special laws to enable one or more **silent partners** to be members of a firm. Silent partners have no part in management but share in profits. Partners with limited liability are known also as **special partners,** to distinguish them from the **general partners** who have unlimited liability. W. H. Lough says:[1]

> To secure this restricted liability it is necessary to comply closely with the statutory provisions. The procedure necessary to form a limited partnership is almost as formal as the incorporation of a stock company, and failure to observe the required formalities may result in making the special partners liable as general partners. Sometimes it is attempted to secure the benefits of this limited liability without complying with the law. In such case, the individual who invests his money keeps the matter secret and is known as a dormant or "sleeping" partner. If the arrangement is discovered, he would be liable in exactly the same way and to the same extent as an active partner.

A joint-stock company is a partnership having transferable shares to represent its capital. In New York, joint-stock companies must conform to the state law regulating their organization. In other states they are formed by ordinary agreement. Owing to the unlimited liability feature of joint-stock companies and to the fact that those of the voluntary type cannot hold real estate, little recourse is had to this form of organization outside of New York. In New York individual members cannot be sued until it is proved that the claim cannot be collected from the company; also, joint-stock companies sue or are sued in the name of the president or treasurer. Outside New York these companies bring suit in the name of all their members, and only those members served with process can be held. In Great Britain the joint-stock company is practically the equivalent of the American corporation.

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[1] Business Finance, p. 19.

Trusts are sometimes formed to carry out business undertakings. One plan is to organize a board of trustees who take over stock of constituent companies and thus form a unified control. The owners of the stock receive therefor receipts known as **trust certificates.** This form of organization has been declared illegal as restricting competition.

Holding companies have superseded the trusts, but are often wrongly called trusts.

In Massachusetts "voluntary associations" are a type of trust originally organized to deal in real estate because prior to 1912 the state law did not authorize corporations to do this. Recently these have become active in other forms of business. Lough gives the important features of these as follows:

1. A deed or declaration of trust, drawn up to define the rights and powers of the trustees and the shareholders.
2. Two or more trustees who are authorized to take over and manage the capital, business, or property supplied by the shareholders.
3. Shareholders who receive transferable certificates representing their respective interests in the profits and in the property on dissolution.
4. Provisions for division of profits, appointment of trustees to fill vacancies, and for dissolution at termination of the trust.

The advantages of such voluntary associations are thus summarized by the Massachusetts Commissioner of Corporations:

> 1. The experience of 25 years shows that they furnish a convenient, safe, and unobjectionable form of co-operation, ownership, and management.
>
> 2. Their form of management is more flexible, more economical, and more convenient than that of a corporation. Trustees can do business with more ease and rapidity than a board of directors.
>
> 3. In particular they afford a convenient form for combining capital for the development and improvement of real estate as the form of organization insures a continuity of management and control that specially appeals to investors in real estate, and which cannot be secured by a corporation on account of the change of officers each year. Trustees are not changed as frequently as are directors of a corporation.

Capital Financing

COMMON STOCK.—The problem of securing funds for the construction of production facilities arises not only at the inception of an enterprise but also at intervals during its career. Usually the company makes some form of appeal to outside investors. To persuade them to invest it is necessary to show to their satisfaction that their principal will be safe and that an income therefrom is assured. **Stocks** and **bonds** are the securities usually offered.

> **Stocks** represent ownership.
> **Bonds** represent loans.

Stocks carry with them the risks of the business. Bonds carry fixed interest charges and their holders are creditors of the company issuing them. In case of liquidation the bondholders have a claim upon the assets superior to that of stockholders. Failure to pay interest on bonds, other than income bonds, means insolvency. Failure to pay dividends leads to no direct legal

consequences. Dividends are a division of profits made only when profits exist. Stock represents a proprietary interest, not a liability. It also usually represents a proportionate contribution to the corporation's original capital. The values back of stock may or may not include the entire assets of the company.

TYPES OF CAPITAL STOCK.—There are two principal kinds of stock, common and preferred. One kind of **common stock** stands for the entire capital of the business, if there are no preferred stockholders, no bondholders, and no noteholders. Another kind of common stock merely represents an equity in the assets after other securities having a prior lien are considered. The tendency is away from the simple capital structure of the older form of corporation with but one class of stock, all common, toward a more complicated capital structure. Dewing says that common stocks of the first groups are now

> . . . . restricted to a few small railroads, the majority of Massachusetts electric light and gas companies, most small and medium-sized cotton mills, locally owned manufacturing companies, banks, insurance companies, and mines. There have been in almost every case some special reasons tending to hold back these types of industry from developing the more elaborate form of capitalization. Until recently the tax laws in Massachusetts levied a general property tax on bonds, but not on stocks, so that gas companies, electric light companies, and even cotton mills, found a readier sale for their tax-exempt stocks among local capitalists.[2]

Form 1 shows the essential provisions of the stock of the New York Central and Hudson River Railroad Co. Form 2 shows the essential of the partnership shares of the American Express Co.

PAR-VALUE vs. NO-PAR-VALUE SHARES.—When shares of stock have par value, this par value theoretically expresses the amount of the stockholder's original investment. It does not represent a right of ownership because there is no right to collect such par value. The real value of a share changes with the changing fortunes of the enterprise. Since each share represents a proportionate interest in net worth of an enterprise there has arisen recently a demand for stock of **no-par value.** No-par shares do away with the meaninglessness of "par value," avoiding any supposition that there is an equivalence between actual values and par value of stock. The following is from the report of the Hadley Railroad Securities Commission:

> We do not believe that the retention of the hundred-dollar mark, upon the face of the share of stock, is of essential importance. . . . . It is less in accord with existing business habits and usages; but it has the cardinal merit of accuracy. It makes no claim that the share thus issued is anything more than a participation certificate.

FULL-PAID STOCK.—When stock is exchanged for money or property equivalent in value to the par of the stock, the stock is full-paid. Frequently full-paid stock is a legal fiction, the directors resolving that such equivalence exists when it in reality does not. When admittedly not full-paid, stock is subject to assessment for the unpaid balance. This enables the directors to call for the unpaid balances at any time, but interferes with marketing the stock.

VOTING POWERS.—Ordinarily the owner of stock has the power to vote at stockholders' meetings. Frequently ownership and voting power are held by different parties. A **voting trust** is created when stockholders owning a majority of the stock pool their voting power by transferring their stock to **trustees** who issue **voting trust certificates** in exchange. Dividends

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[2] Corporation Finance, p. 11.

A193274 —1—

THE NEW YORK CENTRAL AND HUDSON RIVER

RAILROAD COMPANY

John R. Jones..................................*New York, N. Y.*....................................is
entitled to *One*......................................*(1)*......................................Shares
of One hundred dollars each of the Capital Stock of the New York Central and Hudson River Railroad Company transferable in person or by Attorney on the Books of the Company only on the surrender and cancellation of this Certificate by an endorsement thereof hereon and in the form and manner which may at the time be required by the transfer regulations of the Company.

This Certificate is however to be of no effect or validity until countersigned by the Registrar of Transfers of said Company in the City of New York.

In Witness Whereof, the President and Treasurer of the said Company have hereunto subscribed their names at the City of Albany this........*10th*........day of........*Sept.*........in the year........*One Thousand nine hundred and ten.*

..............*John R. Stanton*............Treasurer..............*James A. Smith*............Vice-President

Certificate for Less Than One Hundred Shares
Countersigned this........*10th*........day of........*Sept.*........*1910*....
One..................*1*..................Share
Union Trust Company of New York, Register of Transfers
By.....*A. W. Kelley*......Vice-President
(Seal)

Form 1. Stock Certificate

This Certificate not valid unless Countersigned *Apr. 24, 1912* by the Farmers Loan and Trust Company, Registers

by........*John R. Sampson*........Registrar

180,000 THIS CERTIFIES THAT Shares

........*John R. Jones*........

is entitled to........*One*........Share in the

AMERICAN EXPRESS COMPANY

No. 51630 1 share

organized under Articles of Association dated November 25th, 1868, in which it is among other things provided

THAT the term of the existence of said Company shall be thirty years and after the first day of December, 1898.

THAT the shares shall be transferable on the Books of the Company only in person or by Attorney upon surrender of the script representing the same and the payment of all calls and assessments unpaid thereon.

THAT such transfer is not matter of right but is permitted by the Company in case the Board of Directors shall not elect to purchase said shares for the benefit of the Company at the market value thereof.

THAT the shares are subject to assessment for all losses and damages and other liabilities incurred in the prosecution of the business of the Company. That the receipt of this certificate constitutes the person receiving the same from the date thereof a member of said Company, entitled to all benefits and subject to all the liabilities of a shareholder therein as fully as signing said Articles of Association would do.

IN WITNESS WHEREOF, the said Company have caused this Certificate to be signed by their President and Secretary and countersigned by the Treasurer at the Office of the Company in the City of New York, this........*twenty-fourth*........day of *April, 1912*.

........*John A. Thompson*........Secretary ....*James A. Bell*........President

Countersigned
by

........*Thomas Roe*........Treasurer

SHARES $100 EACH

FORM 2. Stock Certificate

received by the trustees are turned over to the real owners but the voting power lies in the trustees' hands. Voting trusts are formed most frequently to control for a certain period of years the activities and policies of reorganized concerns. To prevent mismanagement by speculators, the bondholders and minority stockholders sometimes require that the voting trust be controlled by three or five responsible men. When the voting trust is used properly, it insures a stable and continuous policy and provides responsible management.

In most states the laws require that such trusts be kept open to all stockholders who desire to enter it. Even thus restricted these trusts sometimes operate to the advantage of the trustees rather than to that of the corporation. The voting trust, when organized to look after shareholders' interests, are usually supervised by some large banking firm interested in protecting its own reputation and the interest of its customers.

TRANSFER OF STOCK.—Stock certificates show on the face the number of shares represented, to whom they were issued, and the legal conditions under which issued. Stock certificates are transferable, and when indorsed in blank by person to whom issued, are negotiable. They sometimes pass through many hands before being transferred on corporation's books. Dividends are paid to stockholders of record. One purchasing shares should attend at once to their transfer, although if the dividend is paid to the previous holder who sold it before it become ex-dividend, the purchaser has recourse against him for the amount of the dividend.

Issuance, transfer, and handling of capital stock, in case of large corporations, are entrusted to a **transfer agent** and a **registrar.** The transfer agent sees that the record of stockholders is kept up to date—that when transfers are made old certificates are canceled and new ones issued. The registrar checks the issuance and sees that the total does not exceed the amount authorized to be issued.

CORPORATION'S OWN STOCK.—In some states, including Wisconsin, California, and New York, the courts have held that, in absence of contrary statutory provisions, a corporation may deal in its own stock if the transaction is bona fide. In many states the practice is forbidden. If used to reduce outstanding stock without due process of law, it is objectionable.

PREFERRED STOCK.—Preferred stocks are those given a preference over common stocks as to dividends and sometimes as to other rights. The most common rate is 7%. Preferred stock dividends are either **cumulative** or **non-cumulative.** A cumulative dividend, if not paid, accumulates from year to year, so that if profits are not sufficient to pay full rate in one year the unpaid dividend or portion thereof is a prior claim in succeeding years before holders of common stock receive dividends. Non-cumulative preferred stock has a prior claim on the profits of the current year only, so that the corporation need not make up in future years any unpaid dividends. Ordinarily non-cumulative preferred stock is undesirable because it is to the interest of the common stockholders to defer dividends on it. Most industrial preferred stocks bear **cumulative dividends** at the rate of 6%, 7%, or 8%. Unless the charter provisions authorizing the preferred stock specifically state that it is non-cumulative, it will be held to be cumulative. It is best, however, to have the cumulative feature expressly provided. Unpaid cumulative dividends which have accumulated over a period of years and have so become burdensome are sometimes **funded,** securities of

some kind being issued in satisfaction of the claims of the preferred stockholders.

Conditions and limitations governing issue of preferred stock may be classified as:

1. Those regarding the position of preferred stock in case of corporate liquidation.
2. Those pertaining to the lien of the preferred stock on earnings.
3. Those pertaining to the protection of preferred stock against issuance in future of securities having a prior lien on assets or earnings.
4. Those pertaining to the participation of preferred stock in management of the corporation.

These are enlarged upon below:

1. **The lien on assets given preferred stock** in case of liquidation usually is equal to its par value. This, however, may not be worth as much as it appears to be, as other securities having a prior lien may, in case of liquidation, absorb most of the value. It has been found, in practice, that in industrial and railroad reorganizations preferred stockholders possess no material advantages over common stockholders.

2. As to **earnings** the points to be covered are: (a) what the fixed dividend rate shall be; (b) whether or not the dividend shall be cumulative; (c) what rights of participation may be given in excess earnings.

3. **Protection against bond issues** is frequently provided for, because these take a lien prior to that of the preferred stock. There is usually no restriction on any increase in floating indebtedness. Protection against bond issues usually takes the form of a provision requiring that the consent of a large majority of outstanding preferred stock is necessary to secure authorization of a bond issue. Sometimes mortgaging the property is prohibited entirely. In some instances directors have destroyed the effect of such protective provisions by guaranteeing bonds of other companies. Sometimes preferred stockholders are protected against an increase in their stock without their consent by requiring that a special meeting of preferred stockholders be called to get consent. Sometimes the amount of authorized preferred stock is made so large that such consent is unnecessary. In such cases a possible way of protecting holders of outstanding preferred is to require that net earnings or surplus be ample to meet all dividend requirements on both old and new stock.

4. **Voting privileges** are usually denied preferred stock. Sometimes control is transferred to preferred stock if dividend payments are not made in accord with requirements.

Preferred stock in industrial corporations usually represents the tangible assets, whereas common stock is a capitalization of expected excess income.

Frequently corporations retain the right to redeem preferred stock, usually at a premium of from 5% to 20%. **Sinking funds** may be established for this purpose.

The following provisions appear in the certificate of incorporation of the New York Air Brake Co. The class A stock to which it refers is, in effect, non-par cumulative preferred as to dividends and preferred as to assets.

1. Out of the surplus or net profits arising from the business of the corporation, the holders of the Class A Stock shall be entitled to receive dividends at the rate of $4. per share per annum, payable quarterly on the first day of January, of April, of July and of October in each year, from October 16, 1922, (or if so determined by the Board of Directors and so expressed in the certificates of stock, from the date of issue), before any dividends shall be declared or paid upon or set apart for the common stock, and such dividends shall be

cumulative, so that if in any year or years dividends upon the outstanding Class A Stock at the rate of $4. per share per annum shall not have been paid the deficiency shall be paid before any dividends shall be declared or paid upon or set apart for the common stock.

2. The corporation shall set aside, on January 1st, 1925, and, so long as any of the Class A Stock shall be outstanding, on each succeeding January 1st, as a **Sinking Fund for the purchase or redemption of its Class A Stock,** a sum equal to one dollar per share on the maximum aggregate number of shares of the Class A Stock which shall theretofore have been issued and not converted into common stock, whether or not such Class A Stock shall be then outstanding. The sum or sums so set aside in each year shall be promptly applied to the purchase of Class A Stock at public or private sale at the lowest price at which the same may with reasonable diligence be obtained by the corporation, but in no event shall any stock be purchased under the provisions of this paragraph at a price exceeding $50. per share, or if the price which the corporation shall have received for the said stock upon the issuance thereof shall have been less than $50. per share, then at a price not in excess of such issue price; and to the extent that the same cannot be so applied within one year from the date when the same shall have been so set aside it shall thereafter revert to the company free from the restrictions contained in this clause 2. All amounts required to be set aside for the Sinking Fund, as herein provided, shall be set aside in each year from, and only from, surplus or net profits of the corporation (including surplus or net profits accumulated in previous years and unapplied) remaining after full cumulative dividends on the Class A Stock outstanding shall have been declared and paid or provided for, including all accrued unpaid dividends, and this obligation shall be cumulative so that if in any year said remaining surplus or net profits shall be insufficient to permit the full amount required as aforesaid to be set aside, or if for any reason the full amount shall not be set aside, the deficiency shall be made good out of the surplus or net profits of the succeeding year or years before any dividends shall be declared upon or set aside for the common stock. If in any twelve months' period ending December 31st, the corporation shall have set aside and applied out of such remaining surplus or net profits any amounts in excess of or in advance of the above requirements, the corporation shall be entitled to be credited on its obligation to set aside moneys as aforesaid in subsequent periods to the amount of such excess or advance. The obligation of the corporation as to the setting aside and application of the Sinking Fund, provision for which is in this clause 2 contained, shall be contingent upon such action by the stockholders of the corporation as is necessary under the laws of the State of New Jersey. Prior to January 1, 1925, and during each year thereafter so long as any of the Class A Stock of the corporation is outstanding, the corporation will, however, either at a special meeting of the stockholders called for the purpose or at their annual meeting, upon due notice, request such consent of the stockholders as is necessary under the laws of the State of New Jersey for full compliance with the provisions of this clause 2.

3. Out of any surplus or net profits arising from the business of the corporation remaining after full cumulative dividends as aforesaid upon the Class A Stock shall have been paid for all past quarterly periods, and after or concurrently with making payment of or provision for full dividends on the Class A Stock for the current quarterly dividend period and the quarterly period next succeeding, and after the corporation shall have complied with the foregoing clause 2 in respect of any and all amounts then or theretofore required to be set aside or applied in respect of the Class A Stock Sinking Fund and shall have made ratable provision for compliance with said clause 2 in respect of the twelve months' period ending the next ensuing December 31, and after making such provision, if any, as the Board of Directors of the corporation may deem necessary for working capital, then, and not otherwise. dividends may be declared upon the common stock at a rate not in excess of four dollars per share per annum, except that when in any year dividends amounting to four dollars per share thereon have been declared and paid upon the common stock of the corporation, dividends in excess of four dollars per share may be declared and paid upon the common stock, but only concurrently with the declaration and payment of a dividend or dividends upon each outstanding share of Class A Stock equal in amount to that declared or paid on each share of common stock over and above the said four dollars per share thereon. The dividend of four dollars per share per annum upon the common stock herein provided shall be non-cumulative, so that if in any year or years the corporation shall have failed to declare and pay dividends on its common stock at the rate of four dollars per share per annum, nevertheless the corporation shall not in any year declare or pay dividends on its common stock in excess of four dollars per share unless concurrently therewith a dividend

(in addition to the preferential dividend of four dollars per share hereinabove provided) shall be declared and paid upon each share of its outstanding Class A Stock equal in amount to that paid upon each share of the outstanding common stock of the corporation in excess of four dollars per share. No increase in the annual rate of cash dividends on the common stock above the annual rate of four dollars per share shall be made, and no extra cash dividend which shall cause the dividends on the common stock for the fiscal year in which such extra dividend is declared to exceed in the aggregate four dollars per share and no stock dividend shall be declared, and no right to subscribe for additional stock of any class shall be granted, upon or to the common stock, unless notice of such increase in rate or declaration or grant shall be given by publication at least once a week for three successive weeks in one newspaper of general circulation in the Borough of Manhattan, City of New York, and a similar notice be mailed to each record holder of Class A Stock of the corporation at his last known post office address at the same time as the first publication hereinbefore provided is made.

4. **The Class A Stock shall be preferred also as to assets,** and in the event of any voluntary liquidation or dissolution or winding up of the corporation the holders of the Class A Stock shall be entitled to receive an amount equal to sixty dollars per share, or if such liquidation or dissolution or winding up be involuntary, a sum equal to fifty dollars per share, in each case with all dividends accrued or in arrears, for every share of their holdings of Class A Stock, before any distribution of the assets shall be made to the holders of the common stock; and, in the event of any such distribution of assets, the holders of the common stock shall be entitled to the exclusion of the holders of the Class A Stock to share ratably in all the assets of the corporation then remaining. If upon any such liquidation, dissolution or winding up of the corporation, the assets thus distributable among the holders of such Class A Stock shall be insufficient to permit the payment to such Class A stockholders of the preferential amounts aforesaid, then the entire assets of the corporation to be distributed shall be distributed ratably among the holders of the Class A Stock. The terms "dividends accrued or in arrears" and "full cumulative dividends" whenever used herein with reference to Class A Stock shall be deemed to mean that amount which shall be equal to four dollars per share per annum thereon to date from October 16, 1922, (or in the case of stock certificates which express that dividends thereon shall be payable and cumulative from some other date, from such other date), less the amount of all dividends paid upon such stock.

5. Upon at least sixty days' previous notice, given both by mail to the record holders of Class A Stock to be redeemed and by publication at least once a week for three successive weeks in one newspaper of general circulation in the Borough of Manhattan, City of New York, the **corporation may redeem the whole of the Class A Stock or any part thereof** by lot or pro rata on the first day of January in the year 1926, or on any quarterly dividend payment date or dates thereafter, at the price of sixty dollars per share plus dividends accrued or in arrears, or if said price be less than the price which the corporation shall have received upon the issuance thereof, then at a price equal to such sum plus ten dollars per share—all by such method as shall be provided from time to time by resolution of the Board of Directors and permitted by law. From and after the date fixed in any such notice as the date of redemption, unless default shall be made by the corporation in providing moneys at the time and place specified for the payment of the redemption price pursuant to such notice, all dividends on the Class A Stock thereby called for redemption shall cease to accrue and all rights of the holders thereof as stockholders of the corporation, except the right to receive the redemption price, shall cease and determine. Class A Stock redeemed or purchased under any provision of this Certificate of Incorporation or otherwise shall not be reissued and no Class A Stock shall be issued in lieu thereof or in exchange therefor and such stock shall be retired from time to time in the manner permitted by law.

The following provision relating to the retirement of preferred stock appears in the charter of the Underwood Typewriter Co.:

There shall be set aside from the net profits of the Company at the rate of not less than \$100,000 per annum a fund to be known as **Special Surplus Capital Reserve Account,** which shall be made and kept going at the rate of \$100,000 per annum for each year before any dividend shall be paid on the common stock and after the expiration of three years from the date of incorporation of the company said Special Surplus Capital Reserve Account shall be used annually in the purchase and retirement of said preferred stock at the lowest

price at which the same may be obtainable, but in no event exceeding a premium of 25% over and above the par value thereof. Such purchases may be made at the option of the Company either at a public or private sale, and all preferred stock so acquired shall be cancelled.

Other provisions looking to the security of preferred stock are as follows. A cumulative reserve fund of 50% of outstanding preferred stock, maintained by setting aside out of earnings an amount equal to at least 3% par value on outstanding preferred stock, is provided by the charter of the Canadian Inter-Lake Line. The Moline Plow Co. must keep net quick assets always equal to at least $140 per share of first preferred. Before additional preferred stock can be issued by Montgomery Ward & Co., it must be shown that net quick assets equal 120% of outstanding preferred stock. Sometimes preferred stockholders have power to veto an increase of bonds or preferred stock. The preferred stockholders of the American Sumatra Tobacco Co. obtain the right to elect a majority of the stockholders if unpaid dividends accumulate above 14%. The preferred stockholders of the American Rolling Mill Co. secure the right to vote if three successive preferred dividends are passed. The chief objection to giving preferred stockholders control in this way is that it may involve frequent shifting of control from one set of stockholders to another. In Canada it is customary to give preferred shareholders the right to vote.

Participation equally with common stock in all dividends after common and preferred have received an equal dividend, is the rule unless specific provision is made to the contrary. However, such provision to the contrary usually is found in the charter, according to which the preferred stock receives a fixed dividend and no more. But numerous exceptions are found. The charter of the New York Air Brake Co. provides specifically for equal participation of its preference "A" and common stock after both receive the regular $4 dividend. The preferred stock of Aberthaw & Bristol Channel Portland Cement Co., an English concern, receives 10%, and after 10% is paid on the common, two-thirds of additional dividends declared.

Redemption of preferred stock is frequently the subject-matter of charter provisions. Often preferred stock is made convertible into common, which gives it speculative possibilities. The conversion may be on a share for share basis, or the ratio may not be equal. Market value is made the basis of redemption in case of some English companies.

Special forms of stock are frequent. In close corporations the sale of stock to persons not already stockholders, or its sale without the consent of the directors, is a frequent qualification; but such provisions are illegal. The stockholders may, of course, agree among themselves not to sell to outsiders. Usually such restrictions prove ineffective when tested.

Stock certificates are formal receipts indicating the number of shares owned by the individual to whom issued. The terms under which the stock is issued are usually set forth briefly on the face of the certificate and detailed provisions may appear on the back. Loss of a certificate, while inconvenient, in no way affects ownership thereof. The tendency is to consider stock certificates strictly negotiable and transferable by indorsements, thus making possession of an indorsed certificate proof of ownership. Stock certificates of large corporations are **registered,** i.e., a **register** is kept containing a list of stockholders. Transfers are made from the name of one stockholder to that of another when a certificate properly indorsed is presented. In England a **bearer** form of certificate is issued but this is practically unknown in the United States.

Watered stock results when the capitalization of a corporation is fixed at a figure higher than is warranted by asset values. With the exception of cash, most assets admit of overvaluation; but the ones in which it is most difficult to detect such overvaluation are the intangible assets—patents, good-will, trade-marks, etc. Services are also sometimes capitalized as organization expenses and afford an opportunity for being overvalued. Sometimes the optimism of promoters proves to be justified through later earnings, but frequently not. The U. S. Steel Corp. started with a large amount of water in its stock as is shown by the fact that the common stock sold at first for about one-third of par value. The water arose through the overvaluation of the securities of subsidiary corporations purchased to secure control and of syndicate services rendered in carrying out the organization procedure. Courts do not insist on a more strict adherence to the law requiring that stock be full-paid because of the difficulty of proving declared valuations incorrect. When the question comes before a court, two possible rules of procedure may be followed. The **true value** rule is to the effect that in case of wide discrepancy between market value of property and par value of shares issued therefor, it is assumed that the shares are not full-paid and therefore the holders may be sued for difference between true property value and par of stock issued for it. The **good faith rule** assumes that the directors are acting in good faith unless fraud is conclusively shown. Legal evidence of fraud is usually difficult to prove.

VOTING.—It is customary to give one vote to each share of stock, unless there is an express provision to the effect that preferred stock has no voting power. This gives control to the large stockholders. This also makes it comparatively easy for one man or a small group of men to secure control of a corporation, sometimes through minority ownership. In England, to prevent control by large stockholders, the number of votes which any one stockholder may cast is limited. Sometimes this is accomplished by making the number of votes which a stockholder may cast smaller in proportion to the number of shares as that number increases. Some English companies limit the number of votes per shareholder to a specific number, as 20 or 30.

Cumulative voting[3] is that method of voting at elections of directors by virtue of which a stockholder is entitled to as many votes as equal the number of his shares of stock multiplied by the number of directors to be elected, all of which votes may be cast for a single director or distributed among any two or more of them.

In Pennsylvania the right to vote in this manner is given to stockholders by the Constitution. In Delaware, New Jersey, and New York it is permitted where provision therefor is contained in the certificate of incorporation.

RULES AND FORMULAS FOR CUMULATIVE VOTING.—

First Rule.—To ascertain how many votes a stockholder may cumulate on a particular number of directors, multiply the whole number of directors by the number of shares held and divide by the number to be cumulated on. This may be put in a simple algebraic formula as follows:

First Formula.—Let d represent the whole number of directors; h the number of shares held; n the number of directors upon whom it is desired to cumulate votes; and x the number of votes which may be cast for each of such directors.

$$\text{Then, } x = \frac{dh}{n}$$

[3] Quoted in entirety from "Where And How," a handbook on business corporations, by John S. Parker, (6th Edition).

For example, there are 5 directors to be elected, a person holds 200 shares, and he desires to cumulate his votes on 2 directors.

$$x = \frac{5 \times 200}{2} = 500$$

Second Rule.—To determine the minimum number of shares a person must hold or control to elect a certain number of directors, multiply the whole number of shares by the number of directors it is desired to elect and divide by the whole number of directors plus one and add one share, disregarding the fraction if any. The following formula may be used:

Second Formula.—Let s represent the whole number of shares entitled to vote at the election; d the whole number of directors to be elected; n the number of directors it is desired to elect; and x the number of shares required to elect n.

$$\text{Then, } x = \frac{sn}{d+1} + 1$$

For example, there are 1,000 shares voting; 5 directors to be elected; it is desired to know how many shares are needed to elect 2 directors.

$$x = \frac{1{,}000 \times 2}{5+1} + 1 = \frac{2{,}000}{6} + 1 = 334\tfrac{1}{3}$$

Disregarding the fraction, the number of shares needed is 334.

Third Rule.—To determine how many directors a stockholder or group of stockholders holding a certain number of shares may elect, multiply the whole number of directors plus one by the number of shares held and divide by the whole number of shares, disregarding the fraction, if any. The following formula may be used:

Third Formula.—Let s represent the whole number of shares entitled to vote at the election; d the whole number of directors to be elected; h the number of shares held; and x the maximum number of directors h may elect.

$$\text{Then, } x = \frac{h(d+1)}{s}$$

For example, in the case supposed, of 1,000 shares voting and 5 directors to be elected, it is desired to know how many directors a stockholder or combination of stockholders holding 400 shares may surely elect.

$$x = \frac{400\ (5+1)}{1{,}000} = \frac{2{,}400}{1{,}000} = 2$$

and applying the second rule and formula, it being found that only 334 shares are needed to elect 2 directors, the 66 additional shares may be cumulated on one or more other candidates.

There are many opportunities for surprise where cumulative voting is allowed, and, unless careful, the holders of a majority of the stock may lose control of the company. Thus, in the case supposed of 1,000 shares voting and 5 directors to be elected, if the holders of only 376 shares should cumulate their votes on 3 candidates and the holders of the remaining 624 shares should cast a straight vote for 5 directors, the holdings of the 376 shares would be successful, as they could cast 626 votes for each man on their ticket as against the 624 votes received by each of the majority candidates.

VOTING BY PROXY.—Notice of stockholders' annual meetings are mailed to stockholders. Proxies are sent with the notices by means of which the stockholder may authorize some officer of the corporation, usually the

secretary, to cast his vote if the stockholder cannot attend in person. It is customary to request that the stockholder forward his proxy, and for that purpose a stamped envelope is usually sent him. The stockholder signs the proxy and returns it. In practice many proxies fail of return because of the stockholders' lack of interest. Frequently at stockholders' meetings there are present the secretary and one or two other officers who carry out the usual formalities, elect a chairman and a secretary, make the usual reports, cast the votes, and carry out a program already agreed upon.

BORROWED CAPITAL.—Borrowed capital is a popular method of financing, owing to the improved machinery of credit facilities. Usually funds secured by means of loans are cheaper than funds secured through stock issues, because the security is better. First-class bonds yield 4%, 5%, or 6%. Preferred stocks yield 6%, 7%, or 8%. Common stocks yield still higher. When money borrowed at 5% can be made to earn a considerably larger return, borrowing becomes profitable. Owned capital then receives a higher return than when borrowing is not resorted to. In extreme instances a very large proportion of total capital is borrowed. Increasing accumulations of funds in hands of individuals, trustees, life insurance companies, and savings banks make it relatively easy to market good bonds. The chief disadvantage of borrowed capital is the increased risk to owners of capital stock, especially in case of corporations whose earnings fluctuate widely from year to year. It is for this reason that industrial corporations prefer to raise their capital through stock issues rather than bond issues. The general rule to follow is that capital should be borrowed only in case of certainty of continued ability to pay the interest thereon. In putting this rule into practice the lowest earnings that are possible during periods of industrial depression must be considered.

SHORT-TERM SECURITIES.—Borrowed capital is divided into two general classes, **short-term and long-term.** Although the distinction between the two is not always clear, obligations having not more than 5 years to run are usually regarded as short-term; securities having 20 or more years to run are regarded as long-term; while those running from 5 to 20 years are classed in either group.

Short-term securities comprise notes, acceptances, and accounts payable. Notes are further classified as merchandise notes, notes discounted at banks, and notes sold to the public. Accounts payable acceptances, and merchandise notes, comprise the principal forms of trade credit. Trade credit is one method of borrowing capital. It is frequently found in form of credit by manufacturers to wholesalers, and in turn by wholesalers to retailers. Note-giving is till common in certain lines of business, but in most lines goods are sold only on **open account,** use of notes being resorted to only when sales are made to weak concerns.

Bank credit enables merchants to bridge over short periods of stringency in cash and to take advantage of cash discounts in making their purchases. The custom of thus depending on banks for short-term loans is well established. In some lines of business, notably manufacturing, it is customary to sell notes through brokers, who in turn sell them to bankers. In this way the notes of reliable concerns become widely scattered among the banks of the country that have idle funds to invest. One method of avoiding an overissue of such notes by a concern is to have them registered by a trust company. A concern should avoid use of both banks and note-brokers simultaneously, so that in an emergency one or the other may be turned to

for aid. Bank credit may be abused by making wrong use of funds secured or by securing funds by means of misrepresentation of conditions. The three legitimate reasons for bank loans are:

1. To finance temporary shortages.
2. To purchase additional goods.
3. To extend additional credit to customers.

Misuse of bank credit may take the form of financing of permanent investments, or in securing funds by means of discounted notes which do not represent actual business transactions, i.e., are not based on merchandise purchases and sales. **Accommodation indorsements,** given as business favors, are being given up as a means of lending credit. Since such indorsements are given without consideration, it is probably illegal for corporations to give them.

If a concern borrows at a bank on an unsecured note, it does so on the basis of its general credit standing. It is often customary to back up notes thus discounted by **collateral security.** Such collateral security may consist of stocks and bonds, merchandise, or notes and accounts receivable. On account of their ready marketability, stocks and bonds are favored by bankers. Of course, not all stocks and bonds have a ready market. It is not good practice to use stock of subsidiary companies as collateral, because it usually has no active market and because the corporation which hypothecates it may thus lose control of the subsidiary which issued it. They may, however, quite properly be used as collateral for long-term bond issues. Merchandise may be used as collateral by hypothecating warehouse receipts, bills of lading, or other forms of specific liens thereon. In this manner great quantities of grain, livestock, and various kinds of goods in transit are used as collateral. When the salability of the merchandise is questionable, bankers will ordinarily make advances up to, say, not over 60%, or 70% of the face value of the draft. This is also true in case of perishable goods. **Accounts receivable** are not usually regarded as sound collateral by bankers. Borrowing on general credit of a company is usually preferable to assigning its accounts receivable. Certain concerns make a specialty of advancing money against assigned accounts receivable. Usually they make advances up to from 70% to 85% of face value of accounts assigned, and charge 6% interest plus a commission of 1% or 2%. The **chief principles underlying bank loans** are four in number, as follows:

1. Bankers should confine themselves to short-term loans.
2. Bankers should ascertain that the funds loaned will not be so expended that they cannot be readily converted into cash.
3. Bankers should secure full knowledge of the internal affairs of a concern before making a loan.
4. The collateral taken should consist of readily salable merchandise or of securities easily convertible into cash.

The custom of requiring detailed financial statements from customers is spreading, and customers of banks are coming to view this requirement as a just one, for in this way they improve their credit standing. Many bankers insist on statements certified by public accountants because such statements reflect the results of wide experience.

If notes are to be rediscounted under the requirements of the federal reserve system, they must conform with certain requirements, the chief one being that they must arise out of actual commercial transactions. Time

to run is also carefully regulated. Paper based on certified statements is given preference.

Banks pursue certain lines of policy in regard to commercial paper. It is customary to clean up all loans yearly or oftener, to prevent them from going into permanent investments. This rule is given special emphasis in case of loans made to concerns engaged in seasonal business.

Whereas notes sold to bankers usually mature within 3 to 6 months, notes sold to the public customarily run for from 1 to 5 years. They are frequently issued in series to facilitate redemption, an equal amount maturing each year; are usually issued in $1,000 and $500 denominations, although sometimes lower or higher than this; and are employed to secure funds in anticipation of issues of long-term securities or to finance undertakings which will produce enough revenue to redeem them at maturity. They are employed during temporary periods of financial stress when interest rates are high, being refunded later on by long-term issues at lower rates of interest.

LONG-TERM SECURITIES.—Long-term obligations usually take the form of a **bond and mortgage.** This theoretically consists of a transfer of title to real estate to a new owner under condition that former owner may redeem it by repaying the loan at maturity. The **bond** is his formal written promise to pay. In reality a mortgage is a pledge of the property as security for repayment of the loan, no actual transfer of ownership taking place. The bond and mortgage is used when the amount of loan is relatively small and the whole is to be secured from one party. When it is necessary to appeal to many persons in order to secure a large sum, bond and mortgage are separated, the mortgage then becoming a **deed of trust.** This is placed in the hands of a trustee, usually a trust company, which thus holds title to the mortgaged property and presumably acts in behalf of the bondholders. Sometimes, owing to the fact that the corporation selects the trustees, such action is not very vigorous. The **deed of trust** is usually a long and complicated document. The **preamble** sets forth the legal status of the company, the amount of the bond issue, the authority therefor, the text of the bond, and other data. The **granting clause** transfers the property to the trustee, describes his duties, and sets forth the company's obligation as to principal and interest. Other clauses govern the duty of the corporation to keep the property in good condition, insured and free of tax liens. It provides that in case of defaults the trustee shall foreclose the mortgage, and gives details governing the duties and compensation of the trustee.

Various special provisions are found in individual instances. Some trust deeds contain an **after-acquired-property clause** by which the mortgage is made to cover property acquired at a later date. This serves as additional protection to bondholders but may be disadvantageous to the company in that it may make it difficult to secure additional loans. Frequently this difficulty is obviated by turning the title of the newly acquired property over to a subsidiary company which is then able to give a first mortgage thereon. A **closed** mortgage is one under which, after the bonds under consideration are issued, no further bonds can be issued. An **open-end** mortgage does not place a limit on the amount of bonds issuable thereunder. **Limited open-end** mortgages are a compromise between the two, the amount authorized exceeding the amount it is desirable to issue at first.

CORPORATION BONDS.—Most corporation bonds are in denominations of $1,000 and $500, but $100 bonds are more frequent than formerly. The disadvantage of small denominations is the increased cost of marketing

them. The totals of single issues sometimes run into the hundreds of millions, there being many issues in this country of $100,000,000 or over.

Bonds are frequently made payable both as to principal and interest in **gold coin.** This prevents their depreciation in value as the result of fluctuations in the value of irredeemable currencies. Corporations may suffer losses as a result of such provision and it may occasion their bankruptcy.

The life of bond issues is determined on various considerations. Nature of the business is a factor. Some issues are perpetual and many run for 100 years or longer, especially railroad bonds. Condition of the money market is frequently a determining factor.

Interest on bonds is usually paid semiannually. Interest dates vary, but January and July are most popular. More or less complicated problems arise in connection with the handling of discount and premium on bonds and these are closely related to the rate of interest. (For full treatment of these problems, see section on "Mathematics.") When bonds are sold at a discount, the discount becomes a burden supplementary to the nominal or coupon rate and should be distributed over the life of the bonds. When bonds are sold at a premium, the premium becomes a deduction from the nominal rate to be distributed over the life of the bonds.

Bonds are **registered** and **bearer** in form. Bearer bonds are transferable by delivery, whereas registered bonds are transferable by assignment. It is customary to permit bondholders to change from one form to another. Registration affords safety, whereas the bearer form affords convenience. Frequently bonds are registered as to principal and have interest coupons attached.

Security for bonds may be of one or more of the following four types:

1. Real estate.
2. Stocks and bonds.
3. Movable property.
4. General credit of the issuing company.

Bonds secured by real estate are known as **mortgage bonds.** Ordinarily these are the most satisfactory type of security from the investor's point of view, because land very often tends to increase in value and buildings are tangible and fairly permanent. For small corporations it is about the only practicable type of bond. The other types necessitate a widely distributed knowledge of the credit standing of the issuing concern. Mortgage bonds are first, second, third, etc. Most of them are first mortgage, but some companies have been compelled to create junior lien issues. Naturally the quality of first mortgage bonds of any given company is better than that of its junior lien mortgage bonds; consequently the interest rate on the junior liens is usually higher.

In case of the best mortgage bonds the amounts of the issues do not exceed 50% or 60% of the value of the property as conservatively appraised, and when a second mortgage is issued the prior and junior liens combined should not exceed 80% of the property value.

Equipment trust bonds differ from first mortgage bonds in that title to the equipment remains with the manufacturer, the equipment being leased to the user, usually a railroad company. The lessee secures title ultimately by completing a series of payments to the lessor. Sometimes a financing company intervenes between lessor and lessee. This company secures title to the equipment by paying the manufacturer and issues a series of equipment trust obligations secured by the equipment. This is an excellent security and defaults on such bonds are practically unknown.

Collateral trust bonds are those secured by deposits of other securities with the trustee who holds the deed of trust. Usually securities of subsidiary companies are used for this purpose. This type of bond is often used to finance the purchase by one concern of the securities of another. Loans are secured temporarily from bankers, these being repaid from the proceeds of the sale of the collateral trust bonds. Railroad and public utility companies make frequent use of this type of security.

Debenture bonds are those issued on the general credit of the company, without any specific pledged security. To successfully float an issue of this type, the issuing company should enjoy high credit standing. Debenture bonds are sometimes used as a means of obtaining funds by corporations having a small amount of money invested in tangible assets but a large amount of good-will.

Various provisions are inserted in debenture bonds to give them a better credit standing than would otherwise be the case. One of these is to provide that in case of any default in interest payment, the principal shall at once fall due. Sometimes the owners are given a preferred charge upon property and income over owners of subsequent issues of debentures or certain other obligations.

Income bonds are secured as to principal, usually by mortgage, but the only claim for interest rests upon the existence of sufficient excess earnings over prior claims from which to make payment of the interest. This unsatisfactory form of bond usually results from the scaling down of creditors' claims in reorganization proceedings, the junior bondholders being compelled to accept income bonds in place of their former holdings. Sometimes the common stockholders, by manipulating the accounts, manage to defer payment of interest on income bonds longer than necessary.

Convertible bonds are those which possess the privilege of conversion into some form of security on some predetermined basis. Usually the security into which bonds may be converted is common stock. The conversion privilege adds a speculative element to the bond which possesses it. If the privilege is valuable, the bonds sell on a basis higher than is justified by their purely investment merits. The value of the conversion depends upon the likelihood that its exercise will become profitable. Issuance of convertible bonds is usually a concession made by the issuing company because of unfavorable money market conditions. The New York Central Railroad Co. in 1915 issued $100,000,000 of 20-year 6% convertible debentures, convertible into capital stock of the company at any time prior to May 1, 1925, at 105. This means that $105 par value of the bonds is convertible into one share of $100 par value of stock. After the conversion privilege expires, the bonds sell on a purely investment basis.

REPAYMENT OF BONDED INDEBTEDNESS.—Provision should be made in advance of the issuance of bonds for their repayment when due. Investors demand this measure of safety. Theoretically a sinking fund which accumulates by the process of periodic instalments and the accretions of compound interest until at maturity of the bond issue it is just sufficient to pay off the bonds, is the ideal method. (For principles governing growth of sinking fund, see section on "Mathematics.") The various plans used in practice are usually more or less radical variations from such an ideal program, and the term **sinking fund** is applied to practically any plan which provides a definite arrangement for the repayment of long-term indebtedness. The actual provision for repayment of a debt is known as its **amortization.** Some of the variations in plans are as follows. The debtor may set aside

fixed sums in the hands of a trustee, annually or semiannually, which the trustee invests, being governed by such general rules as may have been agreed upon. Instead of placing these funds in the hands of a trustee, the debtor may administer them itself. Also instead of investing the funds to accumulate until the issue matures, they may be used to repurchase outstanding bonds. Frequently bonds are issued in series, a given amount falling due each year. In business it is no longer customary to establish sinking funds to accumulate to the amount of the bond issue at maturity. Either more or less continuous repurchase of outstanding bonds or the issue of serial bonds is now the custom. Usually when bonds are repurchased they are kept alive and interest payments are continued. This forms a kind of sinking fund. Sometimes, however, the bonds are canceled, in which case the effect is approximately that secured by serial maturities.

Under the formal sinking fund plan the trustee sometimes invests the funds with a view to his own advantage and he sometimes makes poor investments. If high-class securities only are purchased, the rate of return is low. In practice sinking funds rarely meet expectations. The process of investing and reinvesting funds occasions much idle money. For these reasons redemption of portions of the outstanding issue has become the most popular plan of amortization, which leads to a choice of two methods, viz., (1) serial maturities, and (2) the regular setting aside of the fixed amounts for the redemption of bonds. Serial maturities are preferable for short-term issues; redemption is preferable for long-term issues. W. H. Lough[4] suggests that the best device for amortizing long-term issues is to establish a sinking fund and invest it solely in bonds of the issue outstanding. He lists the following advantages of this plan:

> 1. Danger of losing money is avoided when a corporation invests in its own bonds.
>
> 2. The interest earned is at the same rate as is yielded by the market price of the bonds being amortized.
>
> 3. Repurchase of the bonds tends to maintain their market price, and thus to sustain the corporation's credit.
>
> 4. The burden on the corporation is equally distributed over the life of the bond issue. By keeping the bonds alive the corporation pays out the same amount of interest each year. If interest payments on the bonds thus held are added to the sinking fund, an increasing amount is redeemed each year, but the actual burden remains constant from year to year.

When a **call price** is specified in the bond, the corporation has the right to redeem at that price, having first met requirements as to notice. Bonds are frequently made callable at interest dates on, say, 60 days' notice, and at premiums ranging from a fraction of 1% to 10% or 15%. Such bonds are preferably made **callable by lot** to avoid discrimination against holders. Payment of redemption premiums may be avoided by adopting **serial bonds.**

TRADING ON THE EQUITY.—This phrase, borrowed from English financial terminology, refers to the practice of increasing the profits by borrowing funds at rates of interest lower than the rate of profit which can be earned by the use of the funds in the business of the borrower. If a manufacturer can make 15% in his business, he increases his profits when he borrows at 6%. There are limits, however, beyond which it is dangerous to

[4] Business Finance, pp. 165–166.

carry this policy. If in a year of depression he can earn only 4% on his invested capital, he earns less for himself than if he had not borrowed, because ee is compelled to pay a higher rate than this on the part borrowed.

Illustration.[5]—A manufacturer in good years makes 15% on his capital of $20,000. His affairs at end of first fiscal year are as follows:

Personal capital invested................	$20,000
Percentage earned on capital............	15%
Return on capital.......................	$ 3,000

After borrowing, his annual statement is:

Personal capital invested................	$20,000
Borrowed capital invested...............	20,000
Total capital.......................	$40,000
Percentage earned on capital............	15%
Total return on capital..................	$6,000
8% on borrowed capital..................	1,600
Return on personal capital..............	$4,400

By borrowing at 8%, the manufacturer's return on his own investment is increased from 15% to 22%.

If in a bad year, with borrowed capital as above, he can earn only 5% on his own investment, his statement is as follows:

Personal capital invested................	$20,000
Borrowed capital invested...............	20,000
Total..............................	$40,000
Percentage earned on capital............	5%
Total return on capital..................	$2,000
8% on borrowed capital..................	1,600
Return on personal capital..............	$400

This is only 2% on the manufacturer's own investment, whereas he would have earned 5%, or $1,000, had he not borrowed. The lender is thus protected in the bad year by the proprietor's equity. In corporations the common stockholder is the trader on the equity, making large profits in good years and sacrificing income in bad years.

A corporation disburses its gross income as operating expenses, interest, and dividends. In the income statement, net income is the first significant figure. Its amount and fluctuations depend on amount and range of fluctuations in gross income in relation to amount and range of fluctuation of the percentage of gross income used in operating expenses. This is the **business risk,** being dependent on managerial ability, etc. The next significant figure is surplus, being the one from which dividends are paid. It depends on changes in net earnings in relation to interest costs. This is the **financial risk.**

PRINCIPLES OF CAPITALIZATION.—The word **capitalization** as used in law refers to the total par value of a corporation's authorized capital stock. In the popular sense it refers to par value of secuurity isses, both

[5] Taken from Lyon's Corporation Finance, Part I, pp. 51–52.

stocks and bonds, outstanding at a given time. The word **capital** refers to the actual value of the investment, or net worth. Theoretically when a corporation begins business its capital stock plus any paid-in surplus is supposed to be a fair index of values, but this is not always true. After operations begin the net worth changes constantly, the result being reflected in periodical adjustments of surplus. Net worth, as represented in book figures, is at best an awkward measure of value. Values change constantly, whereas book figures representative of values are adjusted only at intervals and then perhaps on an arbitrary basis. Also, the criteria of value are difficult to limit and define. **Three bases of value** of interest to accountants are cost, cost to reproduce, and earning power. Cost plays such a large part in accounting that it is sometimes mistaken for value, with which it is rarely equivalent in any given instance. Cost to reproduce is frequently more nearly the equivalent of value, yet there are sometimes elements of intangible value adhering to used property which would be neglected by using this as an exclusive criterion of value. This takes the form of good-will, system, harmonious operation, etc. Earning power as a valuation basis considers both tangible and intangible factors. Merely to consider current earnings is insufficient. Potential future earnings are a factor.

For most accounting purposes the **accepted basis of value** is investment. Inaccuracies resulting from the use of this basis are usually disregarded until conversion of the property through sale or otherwise makes necessary an adjustment of book values. Sometimes appraisals show such material discrepancies between book values and present values that the differences are adjusted through capital surplus, but all such changes should be made in a conservative way.

When, as is the policy of most small corporations, stocks and bonds are issued on a basis which causes par value to correspond as closely as possible to actual value, capital stock and net worth are practically equivalent. The agreement which thus exists between capital stock and investment disappears after profits or losses from operations occur. In case of most large corporations such agreement between capital stock and investment at the beginning rarely exists, most corporations starting with a burden of watered stock. In some cases the discrepancy is great.

Initial capitalization legitimately covers not only cost of tangible assets, but also certain intangible elements in form of promotion, engineering, and developmental expenses. Frequently these are capitalized in a single account, such as Organization Expenses or Deferred Expenses. Ultimately, depending on the nature of the items and the policy of the management, these are either written off or are permanently capitalized. **Interest during construction** is usually permanently capitalized.

Where capitalization is based on earning power it usually bears little relationship to tangible values, and frequently is not even based on a carefully considered plan. In case of railroads and public utility companies, stocks yielding 6% or 7% sell around par, but industrial stocks, to sell near par, must ordinarily yield a somewhat higher return. Many corporations whose earnings have been large have adjusted their assets to agree, later to find themselves unable to pay dividends on their increased capital stock. The objection to attempting to capitalize on the basis of earnings is the difficulty involved in estimating future earnings. This is especially true of industrial corporations. The following table shows the percentage of earnings of a number of industrial consolidations as related to earnings of the subsidiary companies before consolidation took place.

Mount Vernon-Woodberry Cotton Duck Co.	166%
National Salt Co.	134
New England Cotton Yarn Co.	98
International Cotton Mills Corp.	56
United States Ship Building Co.	56
United States Realty & Construction Co.	50
Asphalt Co. of America	40
American Malting Co.	31
American Bicycle Co.	24

Good-Will is frequently an important factor in capitalization. (For full treatment of the subject see section on "Good-Will.") Valuation of good-will must not be made on an arbitrary basis. Before capitalizing good-will its permanency should be considered. This is a factor which varies greatly in different businesses.

For discussion of surplus in its relation to capitalization see section or "Net Income and Surplus."

THE FINANCIAL PLAN.—Every corporation should pursue a systematic plan of financing its activities. This involves the exercise of discrimination in the selection of types of securities and the use of judgment in fixing their relative proportions. The familiar forms of securities should be adhered to as they are more easily marketed and their legal status is fixed. The general financial condition at time securities are marketed is an important factor to be considered in selecting the type of security. Issues which under normal conditions are readily marketed, may slump when conditions are unfavorable. Attention should be given to the desires of prospective investors. At the same time the requirements of the company must be kept in mind; and this may make necessary the rejection of a form of security which is otherwise desirable This involves the consideration of the outstanding securities in relation to **assets** and to **earnings.** Failure to observe the principle results in the incurrence of indebtedness which the company is not able to liquidate, or else capital is secured at an excessive cost.

RELATIVE PROPORTIONS OF SECURITY ISSUES.—In certain types of enterprise it is necessary to secure a considerable part of capital by means of bond issues if the common stockholders are to receive a sufficiently high dividend to make their investment attractive. This applies especially to the public utilities in which earnings are low but relatively stable. Under such circumstances it may be an injustice to common stockholders to expect them to supply all funds required for capital financing.

As to the issuance of **funded obligations,** the rule should be followed that income of the company at its minimum must be sufficient to cover fixed charges including interest and sinking fund payments, and also leave a reasonably large margin in addition.

Prudence requires that corporate income under all conditions be adequate to meet **contingent liabilities,** such as may arise through guaranty of bonds of other companies. Good faith requires that in connection with the issue of common stock there be reasonable certainty that there will be an increasing return on such stocks. In brief, estimates of future earnings should not be mere optimistic guesses but should be based on careful analysis.

In addition to proper relative proportions of assets *inter se*, their **relationship to the liabilities** should receive consideration. Assets usually fall into three natural divisions: fixed, current, and intangible. The relationship between these is as follows:

Actual value, not mere book value, of fixed assets should exceed at least 25% to 50% outstanding bonded obligations.

Actual value of fixed assets, plus value of net current assets (after deducting current liabilities) should equal, and generally exceed, all outstanding contingent obligations—preferred stock, income bonds, etc.

Actual value of tangible assets plus value of intangible assets should equal or exceed all outstanding obligations, such as bonds, and preferred and common stock.

Common stock, when found in connection with preferred stock, ordinarily represents the capitalization of intangible values, whereas **bonds** and **preferred stock** ordinarily represent the full value of tangible assets. Frequently intangible values back of common stock are shown in a Good-Will or other account. Usually no direct correlation between classes of assets and classes of securities can be discovered, although a measure of relationship may in reality exist.

ILLUSTRATION OF A FINANCIAL PLAN.—The financing of a short railroad involves the investment in construction work, including terminals, of about $4,183,000. It is estimated that two years after date of opening the road to operations gross earnings will be $2,018,000. Operating expenses are estimated at about 65%, or $1,300,000, and taxes and insurance at $80,000, a total expense of $1,380,000. This leaves an estimated net revenue of $638,000 to pay fixed charges and provide surplus. It is estimated that there will be a deficit of about $100,000 during first 2 years of operation. Equipment is estimated to cost $1,650,000 and the working capital to amount to $500,000. Total capital required is:

Cost of construction	$4,183,000
Cost of equipment	1,650,000
Loss first 2 years of operation	100,000
Working capital	500,000
	$6,433,000

Some capital required for earlier stages of construction is tied up without any income to pay interest on it, until operations begin. One plan of taking care of this expense is to form a construction company to build the road and furnish all other required property and cash. This company should be prepared to hand over to the railroad company $600,000 in cash, the sum required to provide working capital and to cover loss on first 2 years' operation. Construction company should also pay interest, taxes, insurance, etc., up to time property is handed over to railroad company. In exchange for the railroad and cash the railroad company will then turn over all its securities to construction company, from sale of which construction company will derive its profit. The promoters of the railroad will be the organizers of the construction company.

On basis of normal earnings of $638,000 the company might be capitalized as in the following table.

This leaves a balance of $58,000 a year for contingencies out of income for first 10 years.

Common stock required for bonuses to purchasers of first mortgage bonds and preferred stock is $1,100,000. For their own remuneration and to retain control of the company the promoters issue $4,000,000 common stock to the construction company, which, under above estimates, leaves $2,900,000 common stock for themselves.

	Nominal Value	Cash Receipts to Corporation	Fixed and Contingent Charges
5 % first mortgage bonds on all property, exclusive of equipment, to be disposed of at 90 with a bonus of 2 shares of common stock to each $1,000 bond......	$4,000,000	$3,600,000	$220,000
6% 10-yr. serial equipment notes..	1,500,000	1,500,000	90,000
Annual payment during 1st 10 years of operation to retire above notes			150,000
8% cumulative stock to be disposed of at 90, with a bonus of 1 share of common to each 5 shares of preferred.....................	1,500,000	1,350,000	120,000
	$7,000,000	$6,450,000	$580,000

During first 10 years common stock could not expect to receive dividends $150,000 of serial notes is to be retired each year. Interest on that amount each year should be added to the balance available for contingencies. At the end of 10 years there will be no interest to pay on the notes and annual payments on the principal will cease. Therefore $298,000, less any reserve or payments for contingencies, may then be paid as dividends on common stock.

Note that first mortgage bonds are approximately equal in amount to actual cost of mortgaged property, not a very conservative arrangement, but rather common in railroad finance. Preferred stock is equal to more than remaining value of tangible assets, being partly offset by good-will. Common stock is offset only by good-will and prospective earning power. The amounts of the different classes of securities have been determined rather on the basis of earnings than of asset values.

FINANCIAL PLAN FOR CORPORATE COMBINATIONS.—Combinations may be divided into two classes. **Vertical combinations** are those in which joint control is established over two or more concerns having buying and selling relations. **Horizontal combinations** are those in which joint control is established over two or more concerns having competitive relations. Vertical combinations are frequent between producers of raw materials and those who consume these materials in manufacture. The U. S. Steel Corp. is an illustration, carrying on the whole process of mining, manufacture, and selling. **Promotion** is not a distinct process where one concern purchases a controlling interest in others, but it is where a new concern is established to take over previously existing concerns. Although combinations are most important in the field of manufacturing, there are numerous instances of it in trading concerns and in the theatrical and moving picture field. Combinations among banks are also frequent. Also among public utilities—gas and electric light and power companies, water works, etc. Cities Service Co. owns or controls over 100 subsidiary companies. Following are notes of the meeting at which the early plans for the United States Starch combination were arranged.

MEMORANDUM OF MEETING held in the office of Charles R. Flint, June 30, at 10 A.M.

Present: Messrs. Flint, Auerbach, T. P. Kingsford, Higgins. Duryea, Morton and Allen.

It is agreed to organize the United States Starch Company with a capital of $2,500,000 preferred 6% cumulative stock and $3,500,000 common stock. And that the former shall be held in trust by the United States Mortgage and Trust Company, and issued later through bankers to be provided by Mr. Flint. The common stock shall also be held in trust for the owners for such a time as they may elect.

It is agreed and understood that the vendors shall receive $950,000 in cash, $1,550,000 preferred stock, and $3,000,000 in common stock, for their plants and inventories, to be provided for as follows:

First, a loan shall be made by the United States Mortgage and Trust Company for $950,000 for nine months, same to be paid from the proceeds of the sale of an equal amount of preferred stock to be issued at such time as in the judgment of the Directors may be proper. The proceeds of this loan to be used as follows:

To pay Kingsford	$400,000
" " Morton	175,000
" " Graves	350,000
" " Duryea	25,000
Total	$950,000

Second, in addition to the cash paid as above, preferred stock shall be assigned to the vendors as follows:

Kingsford	$1,100,000	on plant and inventory
Morton	125,000	" plant
Duryea	100,000	" inventory
"	75,000	" plant
Graves	100,000	" inventory
"	50,000	" plant
Total	$1,550,000	

which shall be held in trust by the United States Mortgage and Trust Company for account of the owners until the time of issue.

$3,000,000 of common stock is to be issued to the vendors in part payment of real and personal property turned over to the new company, as follows:

Kingsford	$2,422,500
Morton	255,000
Duryea	322,500
Total	$3,000,000

Included in the property turned over by the vendors, it is estimated that there will be about $750,000 of quick assets, consisting of grain, package materials, and starch manufactured and in process.

$500,000 in common stock shall be paid to cover the entire costs of promoting the company, including the charter, the organization, the commission paid in stock for securing the loan, the fee of the bankers who issue the preferred.

Common stock to vendors	$3,000,000
Common stock to promoters	500,000
Total	$3,500,000

ILLUSTRATION OF PLAN FOR A SMALL COMBINATION.—The Western Manufacturing Co. was organized to manufacture patented specialties. Its capital stock was $150,000. First mortgage bonds were issued for $25,000. $100,000 capital stock was given for patents, and $50,000 was given to a promoter for selling the bonds at par. The $25,000 received for the bonds represented total cash actually invested.

It was found that the business could not thrive with the few specialties it controlled, and other specialties were added. As a result, practically all

profits earned from year to year were spent securing and developing new patents. After 5 or 6 years the output became satisfactory. Then a depression wiped out the company's business and cut profits to zero. A recovery has occurred and profits are now about $20,000 yearly. The business has changed considerably in character and is established on a reasonably sound basis. The company, however, is handicapped by its location which is not favorable for its business.

A few miles away is located the Western Machinery Co., a related but not competitive business, owned by James Smith. His plant is worth $60,000 and net earnings are $6,500. In the neighborhood there is also the plant of a concern which went bankrupt some years ago. It has been closed over three years. In their run-down condition the building and other assets are worth over $100,000 but can be bought for much less.

The proposed plan is to combine these three plants under the name and charter of the first-named company. Smith will remain for a short time with the new organization and then retire. It is proposed to capitalize the Western Machinery Co. as follows:

	Authorized Issue	Issued at Time of Combination
6% first mortgage bonds	$500,000	$150,000
6% cumulative preferred stock	250,000	180,000
Common stock	250,000	250,000

It is proposed to distribute the securities of the reorganized company as follows:

	Bonds	Preferred Stock	Common Stock
Western Machinery Co.	$ 30,000	$100,000	$250,000
James Smith		20,000	
Owners of abandoned plant	20,000	40,000	
To be sold to public	100,000	20,000	
	$150,000	$180,000	$250,000

It is anticipated that the bonds, with a 20% bonus of preferred stock, can be sold to an underwriting syndicate at par. The syndicate can probably dispose of the bonds alone at par, its selling expenses and profits being covered by the preferred stock bonus. The company will realize $100,000 cash.

The financial plan also provides that Smith shall receive in addition to $20,000 preferred, $30,000 cash, leaving $70,000 cash to rehabilitate the abandoned plant and for working capital.

It also provides that when earnings on preferred amount to 12%, the 70% of preferred remaining unissued at time of organization shall be distributed as a bonus in agreed proportion among owners of the three plants entering the combine.

Net profits are estimated to average at least $60,000, or about three times interest and preferred dividend requirements at the outset.

An independent analysis and criticism of the foregoing plan shows that earnings of proposed combination appear to be loosely estimated, and that a much more thorough investigation of probable markets for products, of selling expenses, and of actual expenditures required to build up an efficient

working organization in the abandoned plant, would be demanded by careful investors. Unless it can be shown as a reasonable certainty that earnings will average $60,000 or more, there will be no advantage to the Western Machinery Co. in carrying through the combination. Its plant is the only one earning large profits. Although the Western Machinery Co. could advantageously use enlarged facilities, it may be asked whether a small bond or preferred stock issue based upon its own assets would not provide needed additional facilities with less risk. Under the plan proposed this company assumes most of the risk, contributes its own profits to the payment of interest and dividends, and must rely on its ability to develop new business for the other two plants. The most successful of the three companies would have to give up the certainty of continued satisfactory profits for the uncertainty of developing a new enterprise. The wisdom of combining a successful going concern with an unsuccessful one may always be questioned. It may be better for the successful concern to raise cash on its own credit and purchase outright the assets of the unsuccessful one. The above plan was abandoned for these reasons.

Application of Funds

FIXED AND WORKING CAPITAL.—Money expended on permanent investments such as plant, machinery, and other equipment to be used as instruments in forwarding production or service, constitutes **fixed capital.** Money invested in raw materials, goods in process, finished goods, salable securities, and accounts receivable, as well as cash, constitutes **working capital.** Working capital represents a flow of goods, certain parts thereof being constantly converted into cash, and cash being as constantly converted into other forms of working capital. Working capital is sometimes termed **revolving capital.** To determine **net working capital** it is necessary to deduct from total working capital or working assets the **current liabilities.** Instead of the term current liabilities, sometimes the term **quick liabilities** is used. These are usually composed of bank loans and accounts payable.

Fixed assets and a great part of permanent current assets should be covered by stockholders' investments and long-term bonds. Current liabilities should be carried chiefly to finance seasonal requirements of current funds.

It is more difficult to determine working capital requirements than fixed capital requirements. The working capital supplied must be sufficient to provide the requirements of all normal processes—purchase of materials and supplies, production of finished goods, selling costs, and the cost of delay in securing payment for the product. Certain unavoidable losses and various miscellaneous expenses are liable to be underestimated or entirely overlooked. Since quantity of working capital usually bears a more or less definite proportion to quantity of fixed assets, construction of plant additions involves also the need of increased working capital. Failure to provide sufficient working capital has been a prolific source of financial embarrassment and insolvency. Frequently concerns enjoying a period of prosperity create trouble for themselves by failure to reserve sufficient liquid assets to meet liabilities which have increased as a natural result of such prosperity.

ESTIMATING FIXED CAPITAL REQUIREMENTS.—Under favorable conditions this is much less difficult than is ordinarily the case with working assets. In constructing new plant the cost of many kinds of fixed assets can be based on carefully laid plans. Nevertheless change of plans after construction is begun, and frequently after operations are under way, requires

additional amounts of capital for purchase of fixed assets. Ambitious managers often start various new activities of a costly character. These may be summarized under the following heads:

1. Extensions of original plant.
2. Increased or changed equipment.
3. Operation of side issues.
4. Investment in other concerns.

In considering **relative proportions of fixed and working capital,** the mistake may be made of providing all fixed capital requirements and using whatever is left, without much regard to its amount, as working capital. Adequate working capital is just as essential as adequate fixed capital, and the latter is useless unless business, to the upbuilding of which working capital is essential, can be secured. The problem depends largely on the type of undertaking. In case of a projected hydroelectric company which is to construct a power plant for delivery of current for which contracts have already been secured, payments to be made therefor on a monthly basis, fixed capital can be estimated closely and not much working capital will be required. Quite the opposite situation presents itself in case of a company incorporated to **produce and sell** a patented device. Two important functions are involved—production and selling. Instead of experimenting with costly manufacturing processes, it is preferable to have had the manufacturing done at first by a manufacturer already equipped for the work, and to devote available capital to building up a selling organization and developing the sales field. These problems solved, the construction of a plant should be considered. In this way the tying up of capital is avoided until it can be done with assurance of ability to use the products when the factory is finished.

ESTIMATING WORKING CAPITAL.—The factors to be considered in estimating working capital requirements for a manufacturing business are:

1. Amount and cost of raw material.
2. Labor cost.
3. Overhead.
4. Length of time occupied by manufacturing process.
5. Rate of turnover.
6. Terms of purchase and sale.
7. Ease with which various kinds of working assets may be converted into cash.
8. Seasonal variations.

Working capital, being the excess of current assets over current liabilities, must vary in relation to other balance sheet items in accordance with the nature of the business. Proportion of current assets to current liabilities in manufacturing industry should not, as a rule, be less than 100 to 75, or 100 to 80.

The **working capital ratio** is the relation of current assets to current liabilities. It is sometimes called the **banker's ratio,** because it is used in judging a business for credit purposes. It is best expressed in dollars of current assets per one dollar of current liabilities.

Expansion of current assets and current liabilities on the same **net working capital** produces a lower ratio, and vice versa.

Manufacturing costs are cumulative, beginning with the purchase of raw material and following through a series of processes. In some cases a great

amount of capital is thus tied up not to be realized for several years, as, for example, shipbuilding and the construction of large buildings. Usually construction contracts provide payment for work completed at certain stages after being inspected and approved. This proviso diminishes somewhat the investment required on the part of the contractor, but does not avoid the necessity of investing large sums.

Time is an important factor in determining working capital requirements, especially where a **seasoning period** is necessary, as in suburban real estate developments and in the hide and lumber businesses. Ordinarily payments cannot be secured in advance of delivery of finished product. These conditions necessitate the more or less constant impounding of large sums of working capital.

Variations in market prices so frequently upset calculations based on current or past prices that additional working capital should be provided to meet emergencies of this kind. In 1920 the leather companies suffered great loss on this account. Whereas the Central Leather Co.'s net profit in 1919 was over $15,500,000, its loss in 1920 was over $21,000,000.

Variations in demand are especially troublesome when the manufacturing process is lengthy, whereas in case of producers of commodities which can be made on short notice this is a relatively unimportant factor. These two types are illustrated by bread manufacture and leather manufacture, respectively. In the one case a sudden shift in demand to a commodity of a different quality or type can be readily met without great loss, but not in the other.

Turnover is considered in detail elsewhere in this section, and also in the section on "Inventories." It is of greater relative importance to the trader than to the manufacturer, but is nevertheless of real importance to the latter also. The reason for its greater importance to the trader is the relatively larger proportion of his total investment required to be kept in form of working assets. The tendency is to shorten terms of credit granted to retailers by wholesalers and manufacturers, which makes it increasingly difficult to dispose of goods thus purchased in time to use the returns in paying for them. The time required to dispose of goods is always indefinite and seasonal demands have a certain influence. It is for these reasons that large amounts of working capital are required in trade.

Increasing rapidity of turnover means increasing trade per dollar of working capital invested. A newspaper stand selling morning and evening papers only has a turnover of from 500 to 700 times a year, and requires a small working capital. Requirements are increased when magazines and books are added because turnover becomes smaller. As stocks increase in size and cost this tendency continues. Factors which in any given case tend to increase turnover are **timeliness** and **standardization** of goods, also the **sales policy.** The latter should be formulated to secure quick results. Shelves must not become loaded with unsalable goods. **In manufacturing** raw materials, goods in process, and finished goods must be kept moving. **Standardization** is important because it eliminates unsalable materials and reduces styles and varieties. It is desirable in so far as possible to avoid the manufacture of articles intended merely to satisfy whims because these may be found unsalable at any time. There should be **clean-up sales** at regular intervals. Attention should be given to reduction of time required by the manufacturing process.

Rate of turnover, in general retail stores, is sometimes from 8 to 10, but usually 2, 3, or 4. In retail shoe stores it ranges from .7 to 5.1 according to the Harvard Bureau of Business Research. The Bureau found the turnover in

many stores to be 1.8, and considers one of 2.5 a fair realizable average. Retail hardware stores range from .85 to 5.75, a common figure being 1.8. A realizable average is 2.5. Retail grocery stores range from 3.5 to 23.8. A common figure is 7, and 12 a standard to strive for. In the wholesale grocery business the range is from 2.8 to 11.6 times a year. A common figure is 5.7.

Terms of purchase vary from a cash basis to various periods of credit. Where a cash basis is in effect, considerably more working capital is required, other things being equal, than where a credit period intervenes between purchase date and payment date. Sometimes purchase bills can be paid out of sales receipts. The tendency is to reduce the credit period by granting concessions in the form of cash discounts or other concessions. Six months' time was formerly allowed to retailers. This was cut to 30, 60, or 90 days by offer of liberal discounts. To enable themselves to take advantage of these terms merchants began borrowing at local banks. The cash discount has now come to be a penalty, the wholesaler basing his calculation upon a cash price. This tendency has made larger working capital a necessity. **The shorter the credit period, the larger the working capital required.**

Terms of sale influence working capital in the opposite way from terms of purchase. **The longer the credit period, the greater the amount of working capital required.** In the export trade to South America an interval of at least 5 months intervenes between date of shipment and date of receiving payment—1 for shipment and draft to reach destination, 3 until draft matures, and 1 more for payment to reach shipper in the United States. Sometimes the period is extended to 6 months or more. These conditions necessitate a large working capital.

The **instalment plan** is popular in retailing certain high-priced goods, as pianos, books, real estate, agricultural machinery, etc. The burden of financing such sales has frequently caused bankruptcy, so that many bankers discriminate against those merchants who follow the plan. In case of **real estate** payments are sometimes spread over a period of 5 or 10 years; pianos, 3 years; furniture and agricultural machinery, 1 year. Many buyers default on payments, and goods are gotten back only by an expensive process and in more or less worn condition. At best, expense of collecting instalments is considerable. In case of costly articles it is customary for the seller to **retain title** until the price is paid in full. This is legally permissible in most states. Sales of railroad equipment are an illustration. One plan is to require the purchaser to give a series of notes covering the several instalments, in order to place the transaction on a definite basis and to enable the seller to secure funds by hypothecating these notes.

Illustration of Instalment Plan.—An article sells at retail for \$100. Cost to manufacturer or retailer is \$60; selling expense is \$20; overhead charges \$10; net profit \$10. 50 articles are sold during 1st month's operation; 100 the 2nd month; 150 the 3rd month; 200 the 4th month; 200 each month's thereafter. Instalments are paid at rate of \$10 a month. To simplify matters, assume that the whole \$90 outgo is incurred when each sale is made. How much working capital is required to finance the stated volume of business?

During 1st month the outgo is 50×90, or \$4,500, and cash receipts are $50 \times$ \$10, or \$500, leaving a cash deficiency of \$4,000. During 2d month the outgo is 100 times \$90, or \$9,000, while receipts are \$500 covering sales made during 1st month, plus \$1,000 for sales during 2d month, making a total of \$5,000; leaving a cash deficiency of \$7,500. In tabular form these calculations are as follows:

	Outgo	Receipts	Cash Deficiency for Month	Accumulating Deficiency
1st month..........	$ 4,500	$ 500	$ 4,000	$ 4,000
2nd "	9,000	1,500	7,500	11,500
3rd "	13,500	3,000	10,500	22,000
4th "	18,000	5,000	13,000	35,000
5th "	18,000	7,000	11,000	46,000
6th "	18,000	9,000	9,000	55,000
7th "	18,000	11,000	7,000	62,000
8th "	18,000	13,000	5,000	67,000
9th "	18,000	15,000	3,000	70,000
10th "	18,000	17,000	1,000	71,000
11th "	18,000	18,500	500*	70,500
12th "	18,000	19,500	1,500*	69,000

* Excess receipts.

If the seller does all of his own financing, he must have at its maximum a working capital of $71,000. These figures emphasize the principle that **during periods of rapidly increasing business cash receipts do not keep pace with volume of sales and outgo.** The first stage in building up an instalment business is a stage of heavy investing. There are three ways of shifting a portion of the financial burden of building up an instalment business to financial agencies:

1. By securing a heavy line of credit from the bank on the strength of general showing of profits and accumulating assets in form of accounts receivable.
2. By securing notes from purchasers as indicated above, and discounting them.
3. By arranging with a financial company to purchase the instalment accounts or notes receivable, or by securing advances on the basis of these notes or accounts when used as collateral.

LIQUIDITY OF ASSETS.—Cash must always be distinguished from other **quick assets,** such as accounts and notes receivable having early maturity dates, as well as salable merchandise, although some of these may be regarded as being very nearly the equivalent of cash. All items convertible into cash only after a considerable time are in a different category; the more easily current assets are convertible into cash, the less need be the proportion of current assets to current liabilities, hence the less need of working capital. The only method of increasing the liquidity of stocks of merchandise is by exercising care to buy only those that are readily salable.

Finance corporations discount instalment and commercial accounts receivable, thus aiding merchants to convert them into cash before maturity. These corporations operate in two distinct fields and are divisible into two groups. One group makes advances against **instalment accounts.** The other makes advances against **commercial accounts receivable.** On instalment accounts these finance corporations advance from 60% to 65%; on commercial accounts, from 75% to 80% of face value. Sometimes a fixed time of credit is granted against which the borrower maintains the required amount of collateral, paid and bad accounts being constantly replaced by

new ones. On the other hand, the loans may be in blocks, each being based on a new group of accounts and being regarded as a distinct transaction.

Seasonal variations are a serious handicap in some lines, such for example, as the manufacture of rubber shoes, agricultural implements, and sporting goods. This necessitates either accumulation of large stocks of raw materials during the remainder of the year to meet requirements of the busy season, or the purchase of large stocks of raw material at a given season to be gradually used up during remainder of the year. This requires periodic tying up of working assets. The usual method of handling this situation is to secure larger bank loans to meet the peak load, then pay them off as the goods are sold. But this dependence on banks is unsafe practice; loans or renewals of loans are sometimes refused. One solution is to carry a larger permanent working capital, investing the surplus not required during the off-season in securities which can be easily liquidated, such as short-term notes. These do not fluctuate much in value and may be bought in any quantity desired.

Promotion

DEFINITION.—Promotion consists in raising required capital for launching an enterprise by selling securities, and in making the necessary preliminary arrangements for such sale of securities. The **promoter** is the man who performs the work of bringing capital and enterprise together. Promotion consists of three stages:

1. Making a preliminary investigation of all aspects of the proposed enterprise.
2. Assembling the enterprise—organizing a plan, securing options, securing a charter, etc.
3. Financing the concern, which consists in the actual selling of securities.

INVESTIGATIONS.—Upon the thoroughness and accuracy of the investigations the future success or failure of the enterprise is largely dependent. Investor and promoter are equally interested in the investigation. In case of reorganizations or consolidations of old concerns, certain parts of the investigation may be omitted. Too frequently all parts are done carelessly, resulting in costly miscalculations. Most uncertainties can be eliminated by a careful preliminary investigation. Investigation covers an infinite range of variations, embracing such unlike subjects as social and political conditions on the one hand, and technical engineering and construction problems on the other. Large reports contain from 50,000 to 200,000 words of concise, boiled down information. In a paper entitled "Initial Financing of an Enterprise," E. K. Chapman, president of the Hudson Trust Co. of New York City, lists the following points to be covered in investigating the desirability of promoting a manufacturing corporation which is to take over either tangible property or such intangible assets as patents, copyrights, and good-will:

1. Validity of the patents, copyrights, and other titles and rights, or the soundness of the claim of good-will.
2. Strength and dangers of present and potential competition.
3. Likelihood of securing for the new company proper grade of managerial talent.
4. Sufficiency of capital and dependable resources. Enough capital should be provided to afford a margin to meet emergencies and cover losses and expenses of the experimental stage. A second application for capital should be avoided.

5. Par of capital shares should be low if an appeal is to be made to small investors, and in any case not over $100.
6. Contract between corporation and promoter. Promoter should be reimbursed in cash for his actual cash expenditures; for his services he should be paid in stock of the company promoted.
7. Necessity of investing a large sum of capital in constructing a plant for manufacturing proposed product. It may be less risky to have the product manufactured under contract by outsiders or by assembling the parts which have been purchased or manufactured under contract.
8. Probability of securing capital from men with experience in similar lines of business or with special information.

The **preliminary analysis** of enterprises should, in so far as possible, conform to accepted standards. In the field of public utilities bankers have worked out certain **standards**, so that their preliminary estimates of earnings are based on the following probable yearly receipts, from each person in the territory to be covered by the utility:[6]

Electric light and power companies	$3	to	$6	per	capita
Gas companies	2	"	6	"	"
Electric street railways in small cities	4	"	5	"	"
Electric street railways in large cities	7	"	10	"	"
Interurban railways	6	"	10	"	"

The following description of the **preliminary survey** of an electric railway project is adapted from the *Annalist*, July 20, 1914:

In New York City, 25 or 30 banking houses specialize in financing electric railways. Each year each of these receives from 500 to 1,000 proposals for building new lines or purchasing and rehabilitating old ones. **In judging new projects** the bankers take into consideration, first, the political attitude of the state or city regarding public utilities. They have on file tabulated data regarding the political record and activities of each state. They consider, next, the **United States census figures** of population and statistics, which indicate **rate of growth of population.**

Next, the promoter is asked to pay the expenses and fees of an expert engineer designated by the banking house, who makes a preliminary survey of the proposed line. He tabulates the number of cuts and fills, and arrives at an approximate estimate of cost of construction. He also inquires closely into costs of rights of way and terminals. His **advance estimates** of cost of construction and operation are expected to come within 5% of the actual figures.

This **preliminary report is checked** against the previous experience of the house. They add to cost of construction the carrying charges on the investment before it begins to make any return. They may get bids on the construction of power plants. This office analysis and checking is expected to result in very accurate estimates of gross earnings and outgo.

Some bankers decline to take up any such propositions unless advance estimates show **net interest earnings** equal to 2½ times interest charges on the bonds that will be necessary. Each mile of track should earn a minimum of $5,000, a generally accepted figure for interurban roads.

If operating cost is 60%, this leaves net earnings of $2,000. If construction cost is $25,000, all provided by bonds at 5%, interest charges per mile are

[6] Promotion and Organization of Public Service Corporations, by L. R. Nash, of Stone & Webster.

$1,250, leaving $750 per mile to provide for depreciation, unexpected losses, and accidents.

A population per mile in a strip 2 miles wide on each side of the road is considered a safe minimum. The interurban railroad which exists mostly on paper is not in large favor, as it is believed that most choice locations are occupied.

The **preliminary analysis required in case of a railroad** is indicated by the following questions put to the promoter of a proposed railroad, 30 miles long, passing through three prosperous villages, and connecting a rich agricultural and lumber country with Port "D" on the sea:

1. How much traffic is now hauled by existing transportation agencies in this region?
2. How much standing lumber will be made available for shipment by this new road?
3. What are the important markets for this lumber?
4. At what price can it probably be sold in these markets?
5. What, approximately, will be the cost of cutting and of hauling lumber to railroad and loading on cars?

(Answers to the above questions will give a basis for figuring the possible rates on lumber from the point of loading to the markets.)

6. Just how much rail and water traffic through "D" is in sight?
7. What advantages as a port for rail and water traffic will Port "D" have over competing ports?
8. What inducements can be offered which will lead to the diversion of traffic now moving through competing ports to the route through Port "D"?
9. At what rates does traffic now move through competing ports to and from the markets which the promoter hopes to reach by his proposed route?
10. What is the attitude of connecting rail and water lines? Will they be inclined to assist in the development of Port "D" or will they find it to their interest rather to discourage the growth of this port? (This is perhaps the most important question of all, for a short railroad, such as the promoter has in view, could scarcely exist, let alone thrive, unless it has the cordial co-operation of connecting lines.)
11. Assuming that connecting lines are friendly, what rate per ton-mile can the proposed railroad probably secure on through traffic?
12. What will be the exact cost of securing the right of way and constructing the proposed road?
13. What will be the cost of providing docks and other terminal facilities at Port "D"?
14. Do the above estimates contemplate providing a well-built, modern road, or rather a temporary construction which will have to be replaced later?
15. What will be the cost of equipment and of necessary supplies of all kinds?
16. Will it be possible to secure local subsidies or other assistance?
17. Does the promoter have banking connections on which he can rely for assistance in floating the securities of the proposed road?
18. Does the promoter know any capitalists who may be willing—provided satisfactory answers to all the above questions are given—to buy the stock issues of the proposed road?
19. Is the promoter able and willing to incur the expense that will be necessary to secure correct, dependable answers to all the above questions?

An analysis preliminary to the combination of going concerns should cover the following:

1. What is the financial history of each concern that is to be considered as a possible member of the combination? How long has it been in existence? Is its organization stable? Are its earnings increasing or decreasing? Are adequate depreciation and other reserves deducted before estimating profits? Is the plant and physical property in good condition?
2. Who are the men engaged in this industry who have shown the most enterprise and good judgment? Will they join in the proposed combination and work together on harmonious terms? Will it be necessary to give positions to incompetents or to make unfair concessions in order to influence men who are essential to the combination?
3. What, if any, advantages as a money maker will the proposed combination have over the separate, independent concerns? Will the combination be in violation of any laws? Will it be necessary to raise prices or otherwise incur any unpopularity in order to secure

larger profits? Is it possible to introduce more efficient methods into the management of the various plants without arousing undue hostility at the beginning?

4. Assuming that the combination is agreed to, what should be the financial plan of the proposed combination? Upon what basis can its securities be exchanged for the securities of the independent concerns? On what basis can other securities be underwritten and sold to the public? How much fresh capital will the combination need? Will there remain a block of securities sufficient to compensate all who took part in the promotion, for their respective risks and expenditures?

THE PROMOTER.—Promoters are of two types, **professional** and **occasional.** In the latter class are found lawyers, bankers, engineers, and business executives. **Local lawyers** and **bankers** are natural leaders in organizing local enterprises. Many such opportunities come to the lawyer or banker who is in a position to give them attention. This plan is especially suitable for small projects.

A few large engineering firms are actively engaged in organizing, financing, and operating public utility properties. Stone & Webster, J. G. White Engineering Corp., H. M. Byllesby & Co., and Henry L. Doherty & Co., are typical. With these companies promotion has grown from a side issue to a leading activity.

Certain large manufacturing companies finance new enterprises to secure their orders for machinery and equipment. Examples are the Westinghouse Electric & Manufacturing Co. and the General Electric Co., which, through subsidiary companies, sell the securities of the companies which they wish to develop. When it is decided to finance some proposed company, one of two lines of procedure is followed. One kind of firm works in close co-operation with bankers who underwrite the securities and sell them to the public. The other kind has its department for selling securities and does its own financing, thus carrying the enterprise through the stages of investigation, flotation, construction and perhaps the initial stages of management.

Business executives are called upon to act as promoters under various circumstances. In case of **competing manufacturing concerns** it is not unusual to find the task of carrying through a combination undertaken by executive officers of the companies involved. Another instance is where one plant is a **recognized leader** because of size, enterprise, or personality. Here the leading concern usually becomes the promoter. Such promotions are relatively few in number. The **typical instance** is where the business executive promotes entirely new enterprises, usually expecting to become manager after the promotion period is past. Promoters of this type should watch the following points:

1. Sufficient capital should be raised or authorized, but if the construction period is long the sale of securities should be postponed until the company is on its feet. Connections should be made with bankers to carry through the preliminary financing and to underwrite the securities of the completed undertaking. This plan is customary in case of large enterprises but infrequent in case of small ones, although it is suited to the latter.

2. He must protect his own interests. Many executives fail to realize the amount of compensation to which they are entitled. He should retain for himself the equity in the business which remains after he has raised needed capital by sale of bonds and stocks.

3. If the promoter acts as agent rather than as principal, he should protect himself by a definite contract, otherwise he may find himself frozen out after he has given valuable information to his associates.

DIFFICULTIES AND PROFITS OF PROMOTION WORK.—The promoter's work is expensive and hazardous, requires patience and diplomacy, and may end without profit. If he is attempting to unite previously independent and perhaps competitive enterprises, he must conciliate various conflicting interests. Under these circumstances the creation of a working organization, involving selection of officials for the combination, is especially difficult. One solution is to make an outsider the chief official, giving him free rein in choosing subordinates. Another solution is to choose his men from among the old organizations, relying on their influence to forward his plans. Ordinarily the first alternative is preferable.

Half of the really serious attempts at promotion result in failure, except in certain fields where standards for estimating probable income and expenses have become very exact as the result of long experience.

The **promoter's profit** should be whatever remains of the capitalized value after the enterprise is financed.

Illustration.—A promoter estimates that a manufacturing enterprise will earn, after completing a 2-year development period, more than $110,000 net profits yearly. He plans on creating securities salable at par on following basis:

	Capitalization	Interest and Dividend Requirements
$ 500,000	7% first mortgage bonds	$ 35,000
250,000	Preferred stock	22,500
500,000	Common stock yielding 10%	50,000
$1,250,000		$107,500

Assume that the corporation needs $1,000,000 cash, and that expense of investigating, securing options, incorporating, and selling securities is $150,000. The promoter enters into a contract to turn over $1,000,000 cash, or possibly property and total assets for which he pays $1,000,000, in exchange for all bonds, preferred and common stock. He then sells bonds, preferred stock, and $250,000 common stock, and retains for himself $250,000, against which he offsets expenses, $150,000. His net profit, in form of common stock, is $100,000. Among conservative promoters it is a recognized principle that the promoter, to show his faith in the enterprise, should receive his compensation in common stock.

In England **founders' shares,** ranking after preference and ordinary shares, are taken by promoters. These receive dividends only after certain dividends are paid on ordinary shares, when the latter receive a participation in additional dividends. Thus the ordinary shares might be given 6% preference over founders' shares, any additional dividends being divided equally between ordinary shares and founders' shares.

U. S. Realty & Construction Co. was organized in 1902. Capitalization: $30,000,000 preferred, $36,000,000 common. The five promoters announced that:

> It is proper to state that we expect to receive for the responsibility and risks assumed by us in organizing the new corporation, procuring the cash capital, and for the expenses incurred, an individual profit which will or may include the stock of the new corporation remaining in our hands after carrying through the transaction.

In this case the promoter's profits amounted to about $6,000,000 common stock, approximately 10% of total securities, having at the outset a market value of about $1,800,000.

PROMOTER'S SECRET PROFITS.—The promoter's relations to others interested in the enterprise are confidential and he must disclose any secret profits; otherwise he cannot retain such profits. Any special profits are illegal unless made with full knowledge of others interested, or with consent of an independent and fully informed board of directors, or unless those to whom stock is to be sold are fully informed. Otherwise either the corporation or the stockholders who bought the original issue of stock may bring suit for redress at any subsequent time.

OVERVALUATION OF PROPERTY BY PROMOTER.—This may or may not be fraudulent. Overvalued property may be accepted by the corporation and stockholders with full knowledge, in which case they have no recourse against the promoter. But a creditor might proceed against the stockholders on the ground of overvaluation.

PROPERTY OWNED BY PROMOTER.—If the promoter acquired the property in question before inception of the company, he did not act as its agent; consequently he can sell it to the company at any price obtainable without disclosing amount of profit made. His own interest in the property must be disclosed, however, and his offer be made without misrepresentation. Thus, he must not hold himself out as owner when he merely holds an option on the property in question. He must not represent that he turned it in at cost when he is really making a profit. Without such misrepresentation he is entitled to whatever profit he can secure.

SOURCES OF CAPITAL FUNDS.—**The first source of capital funds** is the stock subscriptions of the men who associate themselves together to form the corporation. Next, they may associate with them those who have executive ability and money to invest. So far, the capital is supplied by those actively engaged in the work of the enterprise. The **second source of capital** is the profit earned and retained in the business. The tendency to put profits back into the business is especially strong in case of closely held corporations. Sometimes this policy is pursued for years. This policy has been followed by some of our largest corporations, such as the U. S. Steel Corp. The **third source of capital** is the outside investing public. The outside public consists of **investors** and **speculators.** With investors the chief consideration is **safety of principal.** With speculators the chief consideration is **large profits.** Securities issues are designed to be attractive to one or the other of these two classes; although no definite dividing line separates them.

Investors may be individuals or institutions. First among institutional investors are **banks,** especially **savings banks.** Savings banks investments are restricted by the laws of most states to certain approved issues. **Commercial banks** are also investors, but chiefly in short-term bonds. **Insurance companies** also buy great quantities of securities. Other purchasers are universities and eleemosynary institutions. Trust companies invest the estates of deceased persons in high-grade securities.

Individual investors who look after their own funds can take a higher degree of risk and need not comply with statutory requirements.

Investment associations or trusts are popular in Europe. These sell their own bonds and shares and invest the proceeds in securities of corporations. The purpose is to substitute for the uninformed judgment of the individual with a small amount to invest the judgment of men experienced in investments, also to secure a wide risk distribution. As a rule these associations are ably managed.

Speculative and semi-investment securities are sold chiefly to individuals. Semi-investments consist of preferred stocks and junior bonds, possessing reasonable safety, but subject to greater uncertainty than are gilt-edged securities. The above-mentioned individuals consist of three classes:

1. Those whose first desire is safety of principal. These buy preferred stocks, junior bonds, etc.
2. Those whose first desire is appreciation of principal, but who incidentally do not object to a high yield. These buy common stocks not as yet well seasoned.
3. Those who speculate on margin. Many of these are gamblers; others buy and sell on the basis of inside information, or on the basis of general business conditions, present and prospective.

SELLING SECURITIES.—Four methods of sale are in common use:

1. Allotment to insiders or to previous stockholders.
2. Direct sale to outside public.
3. Sale to banking houses, which in turn dispose of the securities by direct sale to outside public.
4. Sale to banking or brokerage houses, which in turn dispose of the securities through the machinery of the stock exchange.

It is a **universal rule of law** that where new voting stock is issued by an established concern, every voting shareholder must be given an opportunity to buy new shares in proportion to his holdings of old shares. In close corporations new issues of common shares are usually allotted on this basis. Bonds and preferred stock are more frequently sold to outsiders.

STOCK RIGHTS.[7]—The privilege extended to stockholders to subscribe to new stock at a price below the market value of outstanding stock is known as a "stock right." It is evidenced by a **warrant** which resembles a stock certificate. These rights are transferable and are bought and sold in the open market. The right to subscribe is on a pro rata basis, say, for example, 1 share of new for each 4 shares of old stock.

Usage varies as to the **definition** of a single stock right. Sometimes it refers to the privilege of subscribing for 1 new share. Sometimes, as in New York, it refers to the subscription privilege attaching to each share of old stock.

Illustration.—The McAlister-Brown Co. has a capital stock of 10,000 shares, par value of $100 per share, all outstanding and selling considerably above par. An offer is to be made of 5,000 new shares at par to the stockholders. The announcement reads as follows:

To The Stockholders:

The McAlister-Brown Company will extend to shareholders of record on May 1, 19—, the privilege of subscribing, at $100 per share, to 5,000 shares of additional common stock, par value $100 per share, in the ratio of one new share for every two shares of old stock held. Subscriptions will be payable on or before June 1, 19—. Transferable warrants specifying number of new shares for which they are entitled to subscribe will be mailed to stockholders of record as soon after May 1 as practicable.

New York, April 2, 19—.

RIGHTS SOLD ON "WHEN ISSUED" BASIS.—In above illustration rights are bought and sold on a **when issued basis** between Apr. 2 and May 1. The market price is determined as follows. Suppose Kramer, on Apr. 2, buys two shares of old stock on the market at $150 per share. On May 1

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[7] Adapted from an article by Thomas York in Conyngton's Corporation Procedure, pp. 805–813.

he receives 2 rights entitling him to subscribe for 1 new share at par. He does this, and on June 1 is the owner of 3 shares which have cost him \$400, or \$133⅓ a share.

Instead, Kramer might have sold the rights on Apr. 2, each for the difference between \$150, the prevailing market price of the old stock, and \$133⅓, the average cost per share of old and new stock combined, or \$16⅔. The cost of his 2 shares is thus reduced by \$16⅔ to \$133⅓, as is shown below:

Cost of 2 shares of old stock at \$150 per share	\$300
Amount realized on sale of 2 rights	33⅓
Net cost of 2 shares	\$266⅔
Net cost of 1 share	133⅓

A purchaser of the old stock at \$150 fares the same if he sells the rights at \$16⅔ as if he retained them and subscribed for new stock at \$100.

The **parity value** of rights dealt in on a "when issued" basis is their value (\$16⅔ in above example) when it is immaterial whether one buys 2 shares of stock and subscribes for a new share, or whether he buys 6 rights and acquires 3 shares by subscription. Cost per share in either case is \$133⅓. If m is market price of old stock, s the subscription price of the new, and n the number of old shares carrying the subscription privilege to one new share, then p, the parity value of the right, is:

$$\frac{m - s}{n + 1}.$$

Actual market price of rights tends to equal **parity value** and consequently fluctuates with the market price of the stock. If an appreciable difference arises between parity value and market price of the rights, it is profitable to undertake certain market operations which tend to bring market price of rights back to parity value.

First Illustration.—Assume that market price of old stock is \$150, so that parity value of rights is \$16⅔, whereas market price of rights is \$15. Consequently rights are relatively cheaper than stock, and those who desire to secure stock should take advantage of the opportunity to buy rights and subscribe for new shares, as is shown by the following computation:

1. When old stock is purchased:

Cost of purchasing 2 shares of old stock at \$150	\$300
Subscription price of 1 new share (the 2 rights being acquired with purchase of old stock)	100
Cost of 3 shares	\$400
Cost of 1 share	133⅓

2. When rights are purchased:

Cost of 6 rights at \$15 per share	\$ 90
Subscription price of three new shares	300
Cost of 3 shares	\$390
Cost of 1 share	130

By buying rights \$3⅓ per share is saved.

Second Illustration.—If market price of rights is below parity, owner of old stock gains by selling it and buying rights, thus:

Sale of 2 old shares (with rights) at $150 yields		$300
Value of the 2 rights attaching to 2 shares sold		30
Amount realized on stock exclusive of the rights		$270
Purchase price of 4 rights at $15 per right	$ 60	
Subscription price of 2 new shares	200	
Total cost of new shares		$260
Profit on 2 shares		$ 10
Profit on 1 share		5

Proper basis for comparing amount realized on old stock with cost of purchasing rights and subscribing to new stock, is to compare old and new stock as they will be after May 1 when old stock loses the value of the rights. This is done in the computation by deducting market value of rights from proceeds of sale of old shares.

ARBITRAGING IN STOCK RIGHTS.—Disparity between market price of stock and of rights affords opportunity for **arbitraging transactions.** These consist of:

1. Selling stock short (i.e., broker borrows stock to make delivery).
2. Buying rights and subscribing to new stock.
3. Turning this stock over to lender of old stock.

Illustration of Arbitrageur's Profit.—

He sells 2 old shares short at $150		$300
At same time he buys 6 rights at $15 each	$ 90	
He subscribes for 2 new shares	200	
Total cost of 2 new shares		$290
Total profit on 2 shares		$ 10
Profit on 1 share		5

Any of the three types of transactions illustrated above, by readjusting demand and supply of stock and rights, tends to bring them back to parity. Since many stockholders choose to sell their rights rather than subscribe for additional stock, any disparity in price of stock and of rights is usually a discount from the parity value of the rights.

STOCK EX-RIGHTS.—When stock ledger is closed (in above illustration May 1) to prepare warrants as per list of stockholder on a pro rata basis, the stocks sell thereafter **ex-rights,** i.e., minus the value of the rights, and the rights are bought and sold independently of the stock. The formula for finding parity value of rights when stock sells ex-rights is:

$$\frac{m - s}{n}$$

m being market price of old stock, s subscription price of the new, and n the number of old shares carrying the subscription privilege to one new share.

SELLING SECURITIES DIRECT TO OUTSIDERS.—The selling problems which arise in connection with the sale of securities direct to the public are indicated by the following questions:

1. How shall names of prospective purchasers be secured?
2. How shall their interest be aroused?

3. How shall these prospective customers be approached?
4. How shall their confidence be secured?
5. How shall a desire to buy our securities be aroused?
6. How shall the sale be consummated?

Circularizing is one method of selling securities, but it is usually worthless for good securities. It has been employed extensively for swindling purposes, and its close connection with fraud causes it to be regarded with suspicion. The expense is also likely to make this method prohibitive—as much as 25% to 50% of the offered price—whereas the expense of selling good securities ought not to exceed 5% or 10%. The method has, however, been employed legitimately by oil companies and by the United States government in selling Liberty bonds. Moreover, reputable bankers use the mails for advertising high-grade securities. A modification of the plan is to use **selected lists of customers,** which, properly safeguarded, is economical and effective.

Personal effort is ordinarily most satisfactory because it arouses a feeling of confidence in the prospective buyer. Ordinarily a small company cannot market its securities except through the personal influence and work of its officers or representatives. These must work through acquaintances and the influential business men of their communities.

The **prospectus** is essential to a successful selling campaign. It gives the history, present status, and future prospects of the company, as well as the terms and conditions of sale of the securities to be marketed. It is printed, if intended for wide distribution. In case of a going concern the most important features of the prospectus are the **statement of past earnings** and the **balance sheet.** The statement of earnings should extend back at least 5 years, if the company is that old. **Vague but plausible statements** should always arouse the suspicion of the reader because they are a favorite recourse of fraudulent enterprises. Reference to what other companies have done in similar lines should be regarded as valueless. The **balance sheet** should be so constructed that it will submit to analysis and interpretation. **Widely advertised names** appearing on the board of directors are words which the shrewd investor examines with suspicion. The **style** should be concise and dignified. A sentimental appeal should not be used unless it is really sincere.

Direct selling ordinarily grows increasingly difficult as the amount of capital to be secured increases, so that it may be cheaper to sell through bankers. Moreover, as a rule, good investment securities are sold through investment bankers, so that there is an initial prejudice against the concern which attempts to sell its own securities. This statement does not apply to small companies. Bankers do not care, as a rule, to undertake the sale of securities for companies capitalized at less than $1,000,000; or to undertake the sale of a single issue of less than $200,000. Smaller issues may quite properly be sold through the personal effort of the corporation managers.

DEALERS IN SECURITIES.—Security dealers are either wholesalers or retailers, and the retailers do either a general or a special business. The wholesalers deal only in large issues. Among leaders in this group are J. P. Morgan & Co., and Kuhn, Loeb & Co. These houses usually market large issues through syndicates whose members are chiefly in the general retail class. Another type of house is represented by such concerns as the National City Co. and Harris, Forbes & Co., which sell to investors through large sales forces. These concerns frequently take up small issues without form-

ing a syndicate. The specialty houses deal only in one kind of security, as oil, steel, equipment trusts, etc.

Before a banking house undertakes to underwrite an issue, it makes a preliminary **investigation,** which, if satisfactory, is followed by a more thorough one usually carried out by the firm's own engineers and accountants. This is followed by an advertising campaign by means of a conservatively written prospectus, the purpose being to aid the salesmen and attract the attention of prospective investors. One of a firm's best assets is a **list of prospective buyers,** and once secured it is used for future issues.

Investment bankers usually prefer to underwrite large issues at a small commission rate than small ones at a high rate. A **commission** of from 3% to 5% prevails for large railroad bond issues, whereas smaller bond issues and first-class preferred stock issues are sold at commissions ranging from 5% to 10%. Sometimes as high as 20% is charged for marketing small industrial preferred stock issues.

After a banking house has marketed an issue of securities, it has a certain **moral obligation** to look after the interests of the purchasers, although it usually is careful not to obligate itself in any contractual way. In fact it usually adds some statement to its prospectus to the effect that while it regards the information therein contained as correct, it does not guarantee that it is. Should an issue prove unsatisfactory, the house which sold it will try to protect the interests of its customers, by trying to maintain the price. If bankruptcy and reorganization follow, the house obtains the most favorable terms possible for the security holders.

Listing on the New York Stock Exchange usually is a factor in security issues of $10,000,000 and over. As in other instances, such issues are underwritten but listing makes it possible to create a wider demand and thus facilitates sales.

The expense of underwriting and the inability of banking houses to handle some issues because of limited facilities are factors which sometimes prevent the marketing of some sound securities.

THE STOCK EXCHANGE.—In the United States the leading exchanges are in New York, Boston, Philadelphia, Chicago, Cleveland, Cincinnati, New Orleans, and San Francisco. Brokers operating on exchanges charge **standard commissions** for buying and selling. On the New York Stock Exchange they are:

On stock selling below $10 per share	7½¢ per share
On stocks selling at $10 per share and above, but under $125 per share	15¢ " "
On stocks selling at $125 per share and over	20¢ " "

The minimum commission on one transaction is $1. Although the majority of transactions are made for speculative purposes, many are for investment purposes and so result in real absorption of an issue.

To dispose of securities through the stock market it is necessary to arouse public interest, this process being known as **making a market.** To do this either of two steps may be taken. First, arouse the interest of traders in stocks to such a point that the syndicate selling the securities can, by a process of buying and selling, gradually dispose of its holdings without depressing prices. At the same time it sells **over the counter** to persons who do not care to avail themselves of the stock exchange facilities for buying. Second, give the security issue wide publicity, thus aiding sales both through the stock exchange and over the counter.

Selling securities through the stock exchange is uncertain at best, and buying and selling commissions may prove to be very expensive. Frequently listing on an exchange is merely incidental to its flotation; if its market price can then be maintained above its quoted price, this is an aid to selling over the counter.

THE UNDERWRITING SYNDICATE.—The chief purpose of underwriting syndicates is to relieve the corporation issuing them of all risk. In every case the syndicate guarantees to secure for the corporation a fixed sum of money within a given time, and either purchases the securities outright or agrees to take what cannot be sold at an agreed price. This enables the corporation to proceed at once with its projected undertaking, since the raising of the entire sum required is assured. The corporation also secures the assistance of the banker regarding form, price, and other details of the issue, thus minimizing the possibility of errors. Purchasers of the securities regard the willingness of the syndicate to market the issue as a guaranty of its soundness, also as a guaranty that the entire issue will be disposed of, thus insuring the success of the enterprise.

ORGANIZATION OF SYNDICATES.—The essential function of syndicates is the distribution of risk among banking houses. The original agreement is usually between the corporation and a single banking house, after which other houses join with this banking house to aid in selling the issue, thus forming a syndicate. Syndicates not only diversify risk; they also enable banking houses to offer to their customers a more diversified list of securities than would otherwise be possible.

In Wall Street there is a tacit understanding among banking houses that they will join each other in syndicates, and this is so effective that scarcely any consultation precedes their formation. It is not customary to refuse participation in a syndicate when the invitation to do so comes from one of the three or four leading houses. Syndicates involving millions of dollars are formed through informal telephone conversations.

There is an understanding among banking houses that they will not compete, so that in trying to secure a contract with a banking house a corporation should break off all negotiations with one house before approaching another. The banker regards his service as professional in character.

TYPES OF SYNDICATE AGREEMENTS.—There are four types of syndicate agreements, as follows:

1. The corporation markets the issue, the function of the syndicate being to guarantee disposal of the entire issue within a predetermined time.

Illustration.—A corporation issues $10,000,000 5% bonds, offering same at 90. Any bonds unsold at end of 6 months are to be taken by the syndicate at 85. For consideration the syndicate is to receive a commission of 2%. If the issue is successfully disposed of, the syndicate collects and distributes its commission and dissolves. If all the bonds are not sold, the syndicate takes over the remaining and sells them at the best price obtainable.

2. A single banking house contracts with a corporation to handle the issue in question. It then invites other houses to participate. All dealings with the corporation are through the house which makes the original contract.

3. The contract is between the corporation and the syndicate, the latter being formed before the signing of the contract. Management and selling activities are, however, left in the hands of the house which organized the syndicate. No distribution of securities to the other

syndicate members is made unless this member fails to sell them after making the attempt to do so.

4. The contract is between the corporation and the syndicate, the securities being distributed at once among the syndicate members in participation ratio. This is the most common form of syndicate as well as the most useful for handling large issues.

SYNDICATE MANAGEMENT.—In all cases the **active management** of the syndicate is carried on by the house which organizes it. This is illustrated by the following extract from the agreement of the United States Steel syndicate.

J. P. Morgan and Company shall be sole managers of the syndicate, and in behalf of the syndicate they may make any and all arrangements, and may perform any and all acts, even though not herein provided for, in their opinion necessary or expedient to carry out the provisions of this agreement; or to promote or to protect what they deem to be the best interests of the syndicate. The enumeration of specific powers in this or any other article of this agreement, shall not be construed as in any way abridging the general powers of this article intended to be conferred upon or reserved to J. P. Morgan and Company.

For compensation for managerial services the leading house receives a special commission, which is first deducted; then remaining profits are distributed among syndicate members.

Underwriting commissions range from $1\frac{1}{2}\%$ to 10%, or even higher, depending, among other things, upon the credit of the issuing company.

Financial Standards and Policies

DEFINITION.—A financial standard is the expression, usually in quantitative form, of normal relationships among tendencies and facts of a business nature; or else of averages, secured from collected experience data, which may be used as bases from which to judge results secured in a given business. Such standards may be applicable only to particular industries or they may be of more general usefulness. If, for example, the study of income statements of a large number of retail stores shows that the cost of conducting such business is about 30% of gross sales, this may be regarded as a standard of more or less general applicability. Likewise the elements of cost in manufacturing may be reduced to standards. Depreciation rates are being standardized in many industries. In general, it should be recognized that such standards represent approximations. Trade associations are the organizations best equipped to undertake the work of establishing standards. The work being done by the U. S. Chamber of Commerce is illustrative.

Each branch of industry has its characteristic financial and operating ratios, these being the result of its peculiar nature and activities. Within a given industry it is possible to average the ratios of individual concerns, thus securing standard ratios which each concern may regard as standards by which to judge its results. In this way a check on operating and managerial efficiency is secured. Consult Bliss' "Financial and Operating Ratios in Management" for a discussion of methods of preparing financial and operating standards in business.

The following is stated by J. H. Bliss:

In times when business conditions are on an even keel, the statistics on a company's business over a period of years afford the best measure of the standards which should be maintained in its fundamental relationships. The several operating ratios, turnovers, and other measures will naturally vary from year to year more or less independently of

each other. The best ratios, margins, or turnovers obtained at any time, taken together, present standards which should be worked for or improved on if possible. It is often very much worth while to take the statistics on a business for a current year; and compute the improvement in showing made, if all the ratios and measures had been maintained at the highest levels reached in any period. In many cases such an analysis develops the most surprising possibilities of profit. In any event it points out the cost of errors that may have been made. Whether they are avoidable or not is another question which should be answered.

With the changes that have come about in the war and post-war periods, one cannot refer to the standards of previous years with such assurance that they are either proper or possible. The gross margin—the spread between markets—which most industries have to work on, is now proportionately much larger than in former years. In many industries it has to be, particularly when there has been great expansion in plants and production facilities, where organizations have been built up, and where demand has slackened and prices fallen off sharply. Competitive conditions in these lines will likely establish somewhat different normal relationships from pre-war standards.

Labor conditions and the expanded capitalization in many industries will also have considerable influence on the relationships of the future. Probable future price levels for products must be taken into consideration.

Where a business has an unsatisfactory showing, probably the **best basis to work on** is to obtain full information on present conditions and relationships together with all available data on conditions and ratios of previous years, and on this basis to consider what possible improvements in relationships are necessary to re-establish profitable business conditions.

The facts developed by such analysis will not be consoling. On the other hand, if reorganization may be avoided such information will prove of inestimable value. But if a business must go through reorganization or have a house-cleaning, the more intelligently and thoroughly the job is done, the better are the prospects for the future.

RATIO OF WORKING CAPITAL TO TOTAL ASSETS.—The following tables show percentage of working capital to total assets of large American industrial concerns. The first column shows pre-war conditions; the second, post-war conditions. The great increases are due largely to inflated inventory values. The three groups classify the corporations on a pre-war percentage basis; the first group having working capital below 15% of total assets; the second, between 15% and 35% of total assets; and the third, above 35% of total assets.

Percentage of Working Capital to Total Capital

I

	Pre-War	Post-War
Mexican Petroleum Co.	3.5%	
California Petroleum Co.	3.9	(6.4%)
Sloss-Sheffield Co.	6.1	(10.6)
Corn Products Co.	6.7	(30.2)
Pittsburg Coal Co.	8.9	(27.5)
United Fruit Co.	9.0	(28.2)*
Union Bag & Paper Co.	9.4	(25.6)
Harbison Walker Refractories Co.	10.0	(17.2)
American Can Co.	11.5	(30.2)
Railway Steel Spring Co.	13.0	(48.0)
International Paper Co.	14.4	(51.7)

II

Sears-Roebuck Co.	15.1%	(69.1%)
Butterick Co.	15.6	(14.6)
The National Enameling & Stamping Co.	15.7	(38.5)

* Does not include current stock distribution.

	Pre-War	Post-War
U. S. Food Products Corp	16.0	(17.7)**
U. S. Steel Corp	16.2	(38.3)
Pressed Steel Car Co	18.3	(32.8)
Bethlehem Steel Co	19.4	(51.8)†
The B. F. Goodrich Co	19.7	(50.0)
Republic Iron & Steel Co	20.2	(37.4)
May Department Stores	20.7	(55.8)
New York Air Brake Co	21.0	(13.7)
American Steel Foundry Co	21.3	(46.3)
Loose-Wiles Co	21.8	(39.3)
National Biscuit Co	22.3	(30.4)
Lackawanna Steel Co	24.4	(40.1)
Baldwin Locomotive Co	28.1	(61.9)
III		
Studebaker Co	35.5%	(34.0%)
Crex Carpet Co	36.8	(59.9)
Armour & Co	37.0	(68.0)
American Woolen Co	37.4	(77.2)
American Cotton Oil Co	37.7	(34.5)
American Sugar Refining Co	39.6	(57.9)
American Tobacco Co	42.8	(53.3)
Underwood Typewriter Co	43.2	(74.9)
General Motors Co	45.0	(45.8)
Central Leather Co	48.6	(62.0)
Packard Motor Car Co	51.0	(102.1)
Swift & Co	51.0	(84.0)
Morris & Co	53.0	(46.6)
Eastman Kodak Co	57.0	(190.5)
Deere & Co	70.0	(64.2)
International Harvester Co	81.3	(103.4)

** Name changed in 1919 from Distillers Securities Co.
† Including $30,000,000 of 5-year notes.

The following **generalizations** are drawn from these tables. Companies engaged in competition with each other or doing the same general type of business have approximately the same percentage of working to total capital, as shown by California Petroleum Co. and Mexican Petroleum Co. **Extractive industries** do not require large inventories of raw materials, and their chief requirements in form of working assets are cash and accounts receivable. Even their accounts receivable are usually for short terms. **Railway equipment companies** have relatively low working capitals. All steel manufacturers fall in second group. As in case of paper manufacturers which own their own forests, **integrated production** favors a low working capital because it reduces the need for large stocks of raw materials. Note close correspondence between Loose-Wiles and National Biscuit companies. Two important types are found in third group: (1) those which require large inventories of raw materials, goods in process, and finished goods, and (2) those which grant credit to customers on a long-term or instalment basis. In the first class are such concerns as American Sugar Refining Co., Central Leather Co., and Crex Carpet Co. In the second class are International Harvester Co., Deere & Co., and Underwood Typewriter Co.

Each kind of business has its appropriate financial structure. Whether in

a given instance the financial structure is as it should be, must be determined by a consideration of **ratios and turnovers.** Thus, too much capital tied up in fixed assets results in a low turnover of fixed assets, and so on. Everything depends on economy and efficiency in use of capital. Efficient investment of capital is as essential as efficient operation.

CASH RESOURCES.—These include both cash and assets immediately convertible into cash. By experience **banks** have found that the proportion of cash to demand liabilities should be from 15% to 25%. In case of industrials, average cash to gross sales ranges from about 3% to about 6%, and cash resources should be from 12% to 25% of current liabilities. Current liabilities should not exceed 20% or 30% of annual sales if the company pays its bills on time.

TURNOVER.—This is discussed elsewhere in this section. See also section on "Inventories." The following table shows dollars of sales per dollar of capital used in leading industries:[8]

	1914	1919
BUSINESSES WITH RAPID TURNOVERS:		
Women's clothing	$3.09	$3.09
Bread and bakery	1.82	2.18
Butter	4.08	3.59
Slaughtering and meat packing	3.09	3.61
Sugar refining	2.06	3.78
BUSINESSES WITH SLOW TURNOVERS:		
Cement	$0.42	$0.65
Brick and tile	.49	.59
Paper and wood pulp	.62	.87
Fertilizer	.71	.90
Iron and steel and blast furnaces	.69	.99

The following is quoted from Bliss:

> The significance of the **difference in turnover** must not be overlooked. If a business turns its total investment over one time per year, and desires to make a return of 6% on its total investment, obviously it must average an operating profit of 6% on its sales. If, on the other hand, the sales of the business for a year are 3 times the total amount of capital used, and it desires the same 6% return on its total investment, a margin of only 2% operating profits on the sales is necessary. The more rapid the turnover of capital, the smaller is the margin of per cent profit on sales necessary to yield any given return on the investment.

Bliss lists the following **measures of turnover:**

1. Turnover of accounts.
2. Turnover of inventories.
3. Turnover of plant investment.
4. Turnover of all capital.

TURNOVER OF ACCOUNTS RECEIVABLE.—This expresses the relationship between amount of sales and outstanding accounts receivable. The longer an account is carried, the smaller the return realized on the investment and the greater the liability of loss. Figure the turnover as number of days of average sales outstanding in unpaid accounts receivable to end of period. Thus, if receivables outstanding to end of period are $200,000, and average

[8] J. H. Bliss.

daily sales for a period are 6,000, turnover is 33 days of average sales outstanding and uncollected. The rapidity of turnover depends on sales terms and business conditions. The turnover which should be realized in a given business may be approximated by considering sales terms and allowing for slow accounts. Slowing up of turnover usually ties up funds when interest rates are high, as in 1920 and 1921, thus increasing the cost. Advantages of a rapid turnover are illustrated by Bliss, as follows:

Assume a business does an average daily sales volume of $3,000, and carries accounts receivable of $150,000, making outstanding in receivables of 50 days of average sales. If turnover can be cut to 40 days and capital released used to reduce liabilities, bringing accounts receivable down to $120,000, a saving of interest on borrowed capital, interest figured at 8%, would equal $2,400.

The following table shows characteristic turnovers in recent years:[9]

Average Turnover of Accounts Receivable for Representative Companies in Various Industries

(Stated in Number of Average Days' Sales Outstanding in Accounts Receivable)

	88 Cos. 1916–1921	54 Cos. 1914–1921
1914	....	42 days
1915	....	45 "
1916	43 days	43 "
1917	41 "	41 "
1918	44 "	38 "
1919	43 "	44 "
1920	49 "	52 "
1921	53 "	67 "
Average for period	44 "	45 "

In case of **coal** and **electrical machinery** companies, turnover is from 80 to 90 days. In case of **retail chain stores** 3 days is the average. Below is a comparison of accounts receivable turnover in the railway equipment manufacturing industry, based on statistics of representative concerns, and the average of 54 companies:

	Railway Equipment Cos.	Averages of 54 Cos. in 14 Manufacturing Industries
1914	96 days	42 days
1915	167 "	45 "
1916	65 "	43 "
1917	47 "	41 "
1918	53 "	38 "
1919	37 "	44 "
1920	107 "	52 "
1921	126 "	67 "
Average for period	70 "	45 "

[9] J. H. Bliss.

TURNOVER OF FIXED PROPERTY.—This is expressed as relation of volume of business done to capital invested in fixed assets. Preferably, the ratio should be figured on **physical volume** of product handled—pounds, tons, gallons, etc.—per dollar invested in plant and equipment. These measures are absolute. If these statistics cannot be secured, use **sales** in relation to investment in fixed assets. This is not so good because of constant price changes. However, it may be possible to eliminate effects of price changes. One plan is to compile an **index of volume,** based on sales, eliminating increases or decreases due to price changes.

An unfavorable investment turnover means increased overhead costs and resulting disadvantages in competitive business. The **remedies** are:

1. Adjustment of property values.
2. Increase of output.

The first is usually difficult or impossible, and the second is also difficult. Bliss says:

> The point of this is that these relationships must be watched with the greatest of care. Errors made which result in unfavorable relationships in this respect, cannot be cured. The burdens imposed by an unfavorable ratio are of a most lasting kind. A disadvantageous position may be the immediate result of an unwise move or it may be the result of a long period of unconservative policies . . . . in the handling of repairs, depreciation, replacements and additions to capital. . . . . These disadvantages, before they are noted and corrective action taken, have in many cases assumed proportions equal to the dividend requirements of the average concern. . . . .

As between industries there are **wide variations in turnover of fixed property,** because in some lines a heavy fixed investment is necessary relatively to amount of business done, while in other lines the amount of fixed investment required is relatively small. **In similar lines** the turnover is a measure of competitive advantage or disadvantage. Within large organizations the turnover test should be applied to each line of activity. Following table shows average turnover of a large number of companies in various industries. **Measure** used is **dollar of sales per dollar of fixed property investment.**

	1916–1921	1914–1921
1914	$....	$0.99
1915	.....	1.15
1916	1.65	1.66
1917	1.97	2.06
1918	2.81	2.31
1919	1.99	2.07
1920	1.98	2.07
1921	1.25	1.26
Average for period	$1.69	$1.73

Differences in turnover between industries are shown in following table:

	Average for Period of Years
INDUSTRIES WITH RAPID TURNOVER:	
Tobacco products manufacture	$13.05
Mail-order merchandising	9.74
Slaughtering and meat-packing	9.62
Retail chain stores	8.96

Industries with Slow Turnover:	
Bituminous coal mining	$0.34
Iron and steel products	0.70
Petroleum oil	0.75
Sugar production and refining	1.11

TURNOVER OF TOTAL ASSETS.—This is expressed as the ratio of volume of business to total capital. It is a broad measure of effectiveness of financial administration, being a sort of average of all other turnovers. Turnover of total assets should be considered as the connecting link between:

1. Relation of operating profits to sales.
2. Relation of operating profits to total capital.

Thus, if the operating profit is 5 % on sales, and turnover of total assets is 2 times per year (indicating that capital employed is ½ total sales), operating profit is 10 % of capital used. Margin of operating profit on sales multiplied by turnover of total capital should agree with percentage of operating profits on total capital.

Variations in turnover of total assets as between different industries are the result of differences in the businesses. Sales equal to total assets in some lines are made in from 3 to 4 years; in other lines in from 4 to 5 months. As between companies engaged in similar lines, differences in turnover of total assets reflect relative degrees of economy and efficiency in operation and management as well as competitive advantages and disadvantages. The following table shows average turnover of total assets of various industrial concerns. Note the slowing up in 1921. Such a slowing up increases operating costs.

Turnover on Total Capital Employed in Representative Companies in Various Industries

	95 Cos. 1915–1921	57 Cos. 1914–1921
1914	$....	$0.63
1915	....	0.69
1916	0.86	0.90
1917	0.93	0.99
1918	0.99	1.07
1919	0.91	.96
1920	0.88	.92
1921	0.62	.64
Average for period	$0.84	$0.88

Range in turnover in different industries is shown below.

	Average for Period of Years
Industries with Rapid Turnover:	
Slaughtering and meat-packing	$2.36
Mail-order merchandising	1.32
Retail chain stores	1.27
Auto accessory manufacturing	1.16
Industries with Slow Turnover:	
Bituminous coal mining	$0.26
Paper manufacturing	0.45
Iron and steel	0.50
Machinery manufacturing	0.57
Leather manufacturing	0.60

OPERATING RATIO.—This is the percentage of total running expense, including manufacturing, selling, and administrative, to gross sales. The difference between 100%, representing gross sales, and the operating ratio, is percentage of profit on sales. A high operating ratio indicates instability from a money-making point of view, because what profit does exist may easily be transformed into a loss. On the other hand, a very low operating ratio is so favorable that there is danger of increased competition. The use of this ratio was originated by railroad companies, where it ranges from 55% to 95%, or more, but usually is near 70%.

HOW TO STUDY FINANCIAL AND OPERATING RATIOS.—In studying relationships in a given business, these should be brought together in condensed form, detailed statistics being relegated to subordinate schedules or exhibits. The following form (Form 3) is taken from Bliss and is an effective plan for study of all important financial relationships of a business. As many columns may be employed as there are years to be compared. It may also be arranged to show monthly comparisons for each year. To do this, reduce all ratios, turnovers, and earnings to a yearly basis to make the months directly comparable with the years.

The relationships expressed in this form indicate all important trends. By reducing it to a monthly basis bad tendencies may be quickly remedied.

CORRELATION OF ACCOUNTS AND STATISTICS.—Before beginning the development of the accounting scheme a careful survey of the business should be made. The needs of both general and departmental or operating executives should receive consideration. Each class of executive should adopt certain **measures of efficiency**, and the system of accounts and statistics must supply the required information.

Methods of analysis are described in preceding pages. These should be applied to both the business as a whole and to all departments, all important ratios being worked out. This necessitates the allocation of all financial burdens to departments or processes, including capital employed. All general results should be traceable to departments or operations. **Turnover of accounts receivable** and **working capital ratio** are the two important measures which cannot be reduced to a departmental basis, unless the accounts from which they are determined are kept on a departmental basis. The aim should be to make it possible to trace unfavorable trends in general results to their specific causes.

ANALYSIS BASED ON FINANCIAL STANDARDS.—By use of standards derived from study of many cases it is possible to analyze data applicable to a given concern with reference to such common experience. If financial standards are available it is sometimes possible to derive valuable conclusions from data which in itself is incomplete. The following is an illustration of method to pursue in such analysis:

Illustration.—A firm has paid-in capital of $125,000, has been in business 3 years, and has surplus of $25,000. Of this capital, $35,000 is invested in store building, warehouses, furniture, drays, and general equipment. There is approximately $90,000 stock. The surplus is working capital. Credit of firm is $25,000 to $200,000 high credit.

1. What should be average stock of merchandise at all times?

2. What maximum open accounts is it conservative to carry? Goods sold at 60 days' time, 75% of business sold to merchants with good credit, 25% of business retail, principally city accounts collected on first of each month after purchase.

Particulars	1921 Amount	1921 %	1922 Amount	1922 %	1923 Amount	1923 %
1. Cash	$ 50,000	5.0				
2. Accounts Receivable	125,000	12.5				
3. Inventories	200,000	20.0				
4. Other Current Assets	25,000	2.5				
5. Total Current Assets	$ 400,000	40.0				
6. Investments	$ 75,000	7.5				
7. Fixed Property Investment	400,000	40.0				
8. Intangible Fixed Assets	100,000	10.0				
9. Deferred Charges	25,000	2.5				
10. Total Capital Employed	$1,000,000	100.0				
11. Accounts Payable	$ 25,000	2.5				
12. Notes Payable	100,000	10.0				
13. Other Current Liabilities	50,000	5.0				
14. Total Current Liabilities	$ 175,000	17.5				
15. Long-Term Liabilities	$ 200,000	20.0				
16. Reserves	25,000	2.5				
17. Capital Stock—Preferred	$ 100,000	10.0				
18. Capital Stock—Common	400,000	40.0				
19. Surplus Appropriated	50,000	5.0				
20. Surplus Account	50,000	5.0				
21. Net Worth	$ 600,000	60.0				
22. Total Liabilities and Capital	$1,000,000	100.0				
23. Net Working Capital	$ 225,000					
24. Working Capital Ratio	$2.28					
		% to Sales				
25. Volume of Business, lbs.	10,000,000					
26. Pounds per $1 of Plant investment	25					
27. Sales, amount	$1,000,000	100.0				
28. $ of Sales per $1 of All Capital	$1.00					
29. $ of Sales per $1 of Plant Investment	$2.50					
30. $ of Sales per $1 of Inventory	$5.00					
31. $ of Sales per $1 of Accounts Receivable	$8.00					
32. Gross Earnings	$ 300,000	30.0				
33. Per Cwt.	$3.00					
34. Expenses	$ 210,000	21.0				
35. Per Cwt.	$2.10					
36. Operating Profits	$ 90,000	9.0				
37. Per Cwt.	$ 0.90					
38. % on All Capital	9.0%					
39. Miscellaneous Loss and Gain	$ 4,500	.5				
40. Interest Cost	$ 25,500	2.5				
41. % on Borrowed Money	8.5%					
42. Surplus Net Profits	$ 60,000	6.0				
43. % on Net Worth	10.0%					
44. Dividends—Preferred	$ 7,000					
45. Dividends—Common	$ 40,000					
46. Dividends—Other	....					
47. Surplus Adjustments	....					
48. Net Change in Surplus	$ 13,000					
49. Book Value of Common Stock	$ 125.00					
50. % Earned on Common Stock	13.2%					

Note.—This form may be built very advantageously to compare years, preferably to show the changes from pre-war times down to date. It may be used for comparing monthly balance sheets, in which case all turnovers and measures of earnings should be reduced to a yearly basis; for example, the per cent earned on net worth per year as based on the rate of current month, etc.

Form 3. Method of Summarizing Financial Statistics and Ratios for a Business

(From J. H. Bliss, "Financial and Operating Ratios in Management")

3. What maximum amount of bills payable should books show for borrowed money, goods, etc.?

4. What amount in bills receivable is conservative at any one time?

5. What is maximum amount of yearly business firm should do on its capital invested?

6. What amount of dividends should stockholders be paid, average net earnings of firm being 25%, after all expenses and losses are paid and accounted for?

Analysis of Problem.—From information given, a highly condensed balance sheet reads somewhat as follows:

Assets

Building, Furniture, and Equipment	$ 35,000
Stock	90,000
Working Capital	25,000
Total Assets	$150,000

Liabilities

Capital	$125,000
Surplus	25,000
Total Liabilities	$150,000

The $25,000 working capital must consist partly of cash and partly of an excess of accounts receivable over accounts and other obligations payable.

To prepare an opinion, the following additional information is essential:

Normal amount of cash in bank.
Normal amount of accounts and bills payable.
Normal amount of accounts and bills receivable.
Average percentage of gross profits.
Average operating expenses per month.

As these facts are not furnished, following assumptions are made:

Normal Cash Balance	$10,000
Normal Accounts and Bills Receivable	90,000
Normal Accounts and Bills Payable	75,000
Average Operating Expenses per month	15,000
Average Gross Profits (on selling price)	25%

These assumptions may be far from the facts, but that does not affect the reasoning.

With these assumptions, the balance sheet reads as follows.

Assets

Building and Equipment	$ 35,000
Stock	90,000
Accounts Receivable	90,000
Cash	10,000
Total Assets	$225,000

Liabilities

Capital	$125,000
Surplus	25,000
Accounts Payable	75,000
Total Liabilities	$225,000

The **above balance sheet** on its face indicates a fairly strong financial position. **Quick liabilities** are only 75% of quick assets, not counting stock, most of which is readily salable. This percentage in mercantile companies and in manufacturing companies carrying large inventories of finished products is conservative. The percentage in emergencies or at certain seasons of the year may rise as high as 85% or even 90% without indicating recklessness, but this high ratio should be short-lived.

Another ratio to consider is that between quick liabilities and total current assets, including stock. This percentage should not normally be higher than 50%. Balance sheets for a period of years of a large wholesale dry goods company showed a ratio of quick liabilities to total quick assets at end of each fiscal year as follows: 40%, 55%, 40%, 57%, 45%, 40%, 38%. In above assumed balance sheet, total of current assets is $190,000, and of quick liabilities, $75,000 or less than 40%. This is conservative.

Buyers of commercial paper, especially large banks, sometimes make an arbitrary requirement for a definite ratio. In Babson and May's treatise on "Commercial Paper" following rule is laid down:

> Two and a quarter of quick assets, that is, assets which can be converted readily into cash, to one of debts, have been taken as a fair showing to be called for on an annual statement. . . . . The ratio of 2¼ to 1 should be regarded as a fair ratio to be expected on the statement of the average mercantile company, and most borrowers of this class in the open market, under our present system of commercial paper, ought to show this much.

Going back to the hypothetical balance sheet, gross volume of business which can be carried on with safety can be determined only by a study of proper relations of various assets and liabilities to each other. Assume that gross sales in month following date of above balance sheet should amount to $100,000. What would be the effect on the business? First, goods of a cost value of $75,000 would have been sold and would have to be replaced. In addition, with this volume of business, stock on hand would have to be increased to, say, $125,000. This would make it necessary to buy during the month $110,000. Assume that $50,000 of $90,000 accounts receivable fall due during the month and that $40,000 of accounts payable become due, then cash receipts would be $50,000 (assuming that there are no cash sales), $15,000 of which would go for operating expenses, leaving $35,000 to apply toward accounts payable. It would be necessary in addition to draw $5,000 from cash on hand. We must assume that such a volume of business would require an increase in equipment, which we may assume amounts to $5,000. Condensed balance sheet at end of month would then be:

Assets	
Building and Equipment	$ 40,000
Stock	125,000
Accounts Receivable	140,000
Total Assets	$305,000
Liabilities	
Capital	$125,000
Surplus	35,000
Accounts Payable	145,000
Total Liabilities	$305,000

Evidently this is an impossible situation; yet business concerns frequently work themselves into a situation like this by trying to carry a volume of business far beyond their capital.

With only the facts given and with only above assumptions to work on, it is not possible to give an intelligent answer to the questions as to amount of yearly business a firm of this size should do. Probably something like $500,000 a year would be near normal, but it is unsafe to name that figure without knowing more about the situation.

The 1st question, as to average stock of merchandise, can be answered only with reference to the 5th question, as to maximum amount of yearly business. Stock must be proportioned to volume of sales. Sales must be proportioned to equipment and working capital.

It is not possible to answer questions 2, 3, and 4 by giving definite figures, because right amounts of receivables and payables are determined by **relations** of these items to each other and to other assets and liabilities of the business. The attempt has been made to indicate above what are generally considered the right percentages; also to indicate line of reasoning to be followed in passing judgment on any particular business, all essential facts being available.

In a mercantile business running on a sound basis and not increasing volume of sales too rapidly, it is proper to pay out a fairly large proportion of net earnings in dividends. If net earnings are 25% and the volume of sales is near the maximum, a dividend of 15%, or possibly even a little more, is not out of place. The case is different if the business is growing rapidly. Then it is necessary to reserve more cash to build up working capital.

The Budget

ADVANTAGES OF THE BUDGET.—The main object of a budget is to secure internal control. The advantages are:[10]

1. Everyone in the establishment has a definite goal to attain.
2. Sales and production plans are co-ordinated with financial resources.
3. More continuous operation and greater regularity of employment is provided.
4. Products, processes and equipment can be standardized.
5. Costs can be used for purposes of control rather than as historical information.
6. Reduction of waste is encouraged by the maintenance of better balanced inventories, by instituting wage payments based upon results, by definitely assigning responsibility for expenditures.
7. Taken in conjunction with the business cycle, the budget gives warning when to be cautious and the cue to go forward with manufacturing plans.
8. At all times, the budget serves as a measuring stick to compare actual performances with promises and standards, showing not only what may be done but what should be done.

BUDGETARY REQUIREMENTS.—Some of the **essentials of a budget system** are:

1. Careful estimates of sales based upon previous years' experience, tempered by the immediate business situation.
2. Scheduling of production in keeping with sales estimates.
3. Careful gauging of material requirements.

[10] Budgeting for Business Control, published by Fabricated Production Department, U. S. Chamber of Commerce, Washington, D. C.

4. Establishment of standards of labor performance.
5. Careful analysis of expenses, with limits set for auxiliary services, such as power, maintenance, and delivery.
6. Provision for funds to carry through projected sales and production programs.
7. Provision for checking and revising standards by performances.
8. Predetermining of profits and losses.

Material requirements should be determined by anticipating the market 6 months or more. **Expenses** should be watched to keep them in balance as compared with sales. **Provision for funds** to meet all accruing liabilities should be made. **Profits** should be estimated in advance by quarters, and, if possible, by years.

Budgets should be **flexible.** Minimum, maximum, and intermediate programs should be provided, these to be made the measures of operations according to amount of business done. The manner of operating such a flexible budget is described in *Factory*, June, 1922, as follows:

By the end of 1920, the Penberthy Injector Co. had a table, on an ordinary 8½ by 11-inch sheet, showing the amounts allotted to each major item of expense for each $10,000 increment of business over the range of business expected to be done in 1921. Assume, for example, that the minimum business was likely to be $120,000 monthly, and the maximum business $240,000. Then a table was . . . . made out to show the allowable expenditures in each department for an incoming monthly business of $120,000, of $130,000 or $140,000, and so on up to $240,000. Each department budget was itemized on the same plan so that an anticipated business for the month of $200,000 meant a definite figure to be expended for fuel oil in the oil melting department, and so on with each item in each department. These figures were planned to give not only a reasonable working allowance for each item of expenditure throughout the factory, but also to give the profit desired on any given volume of business. For a small amount of business the percentage of profit was kept low.

With these budget sheets prepared in detail for each department and in the hands of each department head, the simple announcements to these executives at the beginning of the month that a budget of $180,000 or whatever figure has been determined upon as the quota for the month will be effective, is enough to notify them what their allotted expenses may be. They turn to their budget sheet and the $180,000 column shows their detailed expenses. These predetermined figures constitute a great convenience as well as a real time saver. At the middle of the month a brief report is made out and sent to each department head showing the half-month's allowance together with the actual figures for the first half of the month. This helps to steady things. A report is also made out showing the actual results at the end of each month compared with the budget figures. Over the desk of the factory manager is a rack of half a dozen swinging frames, each about 30 inches square, in which are kept sets of curves for each department showing from month to month, the budget set for the month, the cumulated budget figures, and the actual performance figures.

In the case of **special order establishments,** sales cannot be planned so definitely, because requirements vary from contract to contract. The elements and operations common to all contracts must be ascertained. Analysis of past sales may show that output falls into certain definite classes and that as between customers only slight and immaterial changes may be necessary. As a result many parts may be made for stock. It is possible to plan the next year's business by careful analysis of sales by territory, products, and customers, supplemented by a study of market conditions. An engineering concern should be able to budget **expenses** and **machine capacity** as well as a concern producing for stock.

Auxiliary services such as power, delivery, maintenance, and administrative routine, should be budgeted as carefully as production, sales, and material requirements. **Clerical work** and **fuel** are illustrations In large plants these are very considerable items.

Finances should be budgeted. Capital will safely reach only so far and it must be distributed in ratios most likely to result satisfactorily. These ratios necessarily differ in different lines. Care should be taken not to invest capital in an uneconomical way, because once it is permanently invested it cannot easily be changed should such investment prove to be larger than was thought necessary.

Working capital is sometimes unprofitably absorbed in inventories which are out of proportion to requirements. Installation of a good system of production control sometimes frees a large amount of working capital tied up in ill-balanced inventories. Sometimes **long-time dating** ties up working capital. Poor collection methods have the same results. A proper budget system will help to remedy these evils. Storing **finished goods** in excess of requirements is costly, consequently should be controlled by the budget.

If possible, finances should be budgeted so as to permit a concern to **go out of debt** once each year, i.e., have on hand sufficient cash to readily liquidate outstanding bank loans. This prevents overexpansion and necessity of funding floating indebtedness. This is especially true in seasonal lines. Short-time obligations are not a permanent contribution to capital.

To permit proper budgeting of finances a business should be planned on either a **minimum plan** or on a **maximum plan.** Under a minimum plan the object is to secure a sufficient volume of business to yield a fair return on investment. Beyond this point the elasticity of the organization must take care of expansion in business. The object is not to secure the greatest possible volume of business, but enough to yield a fair profit. Under a maximum plan the object is to secure as much business as possible. Greater risks are involved and greater profits are possible here than under the minimum plan.

MAXIMUM AND MINIMUM PLAN ILLUSTRATED.—The following illustration of minimum and maximum plans is quoted form "Budgeting for Business Control," published by the Fabricated Production Department of the U. S. Chamber of Commerce:

A prominent manufacturer of farm implements, in an effort to place before that industry something concrete and definite by way of a **financial goal,** used the following illustration:

Finding that there is now employed in the agricultural implement industry $1.35 of available capital for each dollar of sales, this manufacturer estimates a **well-balanced farm machinery company** would require $1,200,000 fully paid-up capital stock, together with the usual seasonal borrowing, to take care of an $800,000 minimum and a $1,000,000 maximum sales volume. From the information at hand drawn from a number of companies over a period of years, he estimates that the $1,200,000 capital would be properly distributed as follows:

Assets	Amount	Per cent of Available Capital	Per cent of $800,000 Sales
Plant	$ 420,000	35	52½
Inventory	400,000	33⅓	50
Receivables	240,000	20	30
Cash	140,000	11⅔	17½
Total	$1,200,000	100	150
Liabilities			
Capital stock	$1,200,000		
Payables, at beginning and end of year	None		
Surplus	As accumulated		
Reserves	As accumulated		

The manufacturer then proposes two plans of operation, a **maximum plan** and a **minimum plan.** The maximum plan contemplated establishes the production and sales organizations on the basis of maximum volume of sales possible, and in the event the maximum sales are not attained, then the net profits are less than expected, while if sales are materially in excess of the maximum, then the finances of the company will be strained.

The minimum plan is based on organizing for a minimum volume of sales on which a satisfactory profit can be made on the capital employed. The minimum plan is predicated on the belief that there are few salesmen who cannot increase their sales 25% in favorable years over normal experience, and that there are few branch houses that cannot handle an increase of 25% with their storage and clerical organizations should the business be available. In other words the minimum plan makes full provision for taking advantage of the elasticity in the organization, particularly in the sales and production departments, while the maximum plan takes no advantage of this elasticity, thus making almost certain large losses in earnings if the business does not come up with the maximum amount of sales. Illustrating this point, the manufacturer uses the following exhibits:

Minimum Plan of Organization

If organized on an $800,000 minimum sales basis, the year's operations would be somewhat as follows:

	Per cent	Amount
Total cost of operations, including—		
Cost of production	.....	....
Sales expense	.....	....
General and other expenses (including taxes)	89.75	$718,000
Interest paid	.....	....
Net profit	10.25	82,000

Should sales exceed expectations and reach $1,000,000 (cared for in part by reduction of inventory and in part by increased production), the showing would be approximately as follows:

		Per Cent	Amount
Net profit on $800,000 sales as shown above (before taking into account savings as outlined below)		10.25	$ 82,000
Plus increased earnings due to larger volume on account of:			
Amount saved by having greater production over which to distribute overhead	4.00%		
Having a larger sales volume over which to distribute sales expense	3.00		
Total saving	7.00%		
Deduct possible increase in interest charges incident to increased volume	.90		
Net saving	6.10%		61,000
Total net profit on $1,000,000			$143,000

NOTE: On an increased volume of sales, no saving is estimated on "General and other expenses," but allowance is made for these to increase in the same ratio on the $1,000,000 volume as obtained on the $800,000 minimum.

Maximum Plan of Organization

If organized on a $1,000,000 maximum sales basis, the year's operations would be somewhat as follows:

	Per Cent	Amount
Total cost of operations, including—		
Cost of production	.....	....
Sales expenses, general and other expenses (including taxes)	86.65	$866,500
Interest paid	.....	....
Net profit	13.35	133,500

Should sales for any reason reach only $800,000, the showing would be as follows:

		Per Cent	Amount
Net profit on $1,000,000 sales as shown above		13.35	$133,500
Less decreased earnings due entirely to lessened sales on account of:			
Reduced factory operations increasing cost of production through having to carry full overheads on decreased volume.	4.00%		
Having to carry a maximum sales expense that could not be reduced in time to make material savings	3.75		
General expense and other expenses that could not be decreased (including taxes) would add in percentage not less than	2.50		
Total decrease in earning percentage	10.25%		
Deduct possible saving in interest, which saving is doubtful	.90		
Total increased cost of carrying on the business on a sales volume of $800,000		9.35	93,500
Leaving net profit		4.00	$40,000
Net loss in earnings due to decreased volume when maintaining full maximum organization			93,500

The foregoing illustration is an interesting attempt to formulate a financial program that will yield a reasonable profit on a balanced volume of business.

Sweet-Orr Budget Plan.—Through the courtesy of Sweet-Orr & Co., Inc., of New York, their budget plan is presented. The descriptive matter has been supplied by Arthur T. Davenport, general manager of the company.

Master Budget

Date...................

Classification	Budget Allowance, May, 1922	Expense May, 1922	Balance May, 1922	Budget Balance, June 1, 1922
Shipments				
Returns and allowances				
Total net shipments				
Purchases material				
Purchases trimming				
Total purchases				
Administrative				
Advertising				
Selling				
Warehousing and shipping				
Total distributing				
Factory administration				
Factory building				
Cutting				
Direct labor				
Manufacturing overhead				
Total manufacturing				
Purchasing expense				
Total expense				

The monthly budget performance for the 14 factories, purchases, shipments, selling and administrative expenses, are shown on this report. The report shows the management just which part of the business is operating within or exceeding the budget. The supporting detail budgets will show just which factory or department is exceeding the budget. In setting up the budget amounts, the works managers or department heads who are responsible for the expenditures are called in conference with the Budget Committee and they set the lowest amount necessary for the various classes of expense. The budget allowances are figured every 6 months and as our fiscal months consist of two periods of 4 weeks each, followed by one of 5 weeks, the budget for pay-rolls and expenses are so figured in our monthly allowances.

Since the budget is revised every 6 months, no changes are allowed after the budget is passed by the board of directors. If the actual sales exceed the budget allowance, a corresponding excess in the purchase of materials and factory expenses is satisfactorily explained.

Form 4. Master Budget

General and Administrative Expense

Date....................

Classification	Budget Allowance, May, 1922	Expense May, 1922	Balance, May, 1922	Budget Balance June 1, 1922
Carfare....................				
Collection expense............				
Depreciation furniture and fixtures....................				
Dues and donations...........				
Insurance....................				
Insurance on merchandise......				
Legal and professional.........				
Light and heat...............				
Postage....................				
Rent.......................				
Salaries....................				
Janitors and watchmen........				
Stationery and printing........				
General administration expense.				
Taxes......................				
Telegraph and telephone.......				
Traveling..................				
Water and ice...............				
Tabulating..................				
Special....................				
Total..................				

Monthly reports of the budget operations are prepared for each factory and for the general and selling expenses of the organization. Each executive in charge of the various expenditures must explain any excess expenditure. The expenses of each function in the organization are carefully checked up, so that when the budget allowances are revised every 6 months there will be no possibility of economy overlooked.

FORM 5. General and Administrative Expense Budget

Comparative Expense

Date....................

Classification	1922	1921	Year to Date	
			1922	1921
Administrative expense........				
Purchasing expense...........				
Selling expenses..............				
Warehouse and shipping.......				
Factory cutting..............				
Factory manufacturing overhead..................				
Factory direct labor..........				
Total..................				
Factory administrative expense.. } Allocated in above				
Factory building expense........ } Allocated in above				

Recapitulation of the expense distribution chart and material purchased.

This report serves the double purpose of acting as a control for the Master Budget and by comparison with the previous year shows the trend of the expenses.

FORM 6. Comparative Expense Budget

Comparative Purchases

Date....................

Classification	1922	1921	Year to Date	
			1922	1921
Material:				
Cloth..........................				
Trimmings..................				
Plant additions...............				
Total....................				

FORM 7. Comparative Purchases Budget

Joliet Warehousing and Shipping

Date....................

Classification	Budget Allowance May, 1922	Expense May, 1922	Balance, May, 1922	Budget Balance June 1, 1922
Indirect labor................				
Sundry expense................				
Sundry supplies................				
Transportation................				
Trucking......................				
Portion of administration......				
Portion of building expense.....				
Total....................				

Of the 14 manufacturing points in this organization, 4 are shipping points and as such have a warehouse and shipping department expense. This expense, while not a charge against factory operations, is under the control and supervision of the works manager in charge of that particular plant. He is therefore held responsible for the shipping expense and must satisfactorily explain any excess expenditures over the budget allowance.

FORM 8. Warehousing and Shipping Budget

Material Purchases

Date....................

Classification	Budget, May, 1922	Billed May, 1922	Balance, May	Budget, Balance, May, 1922	Outstanding Purchases, June 1	Budget, June, 1922	Available, June, 1922	Available, Period
Shirts....								
Overalls...								
Cords.....								
Trimmings.								
Pants.....								
Total..								

Having arrived at the Budget of Sales—the account of cloth and trimmings necessary for each class of merchandise is figured. As the sale of our products is seasonal the purchase of material is much greater in certain months, allowing of course for the time necessary to secure the piece goods and the process of manufacture.

FORM 9. Material Purchases Budget

Selling Expense

Date....................

Classification	Budget Allowance, May, 1922	Expense May, 1922	Balance, May, 1922	Budget Balance, June 1, 1922
Depreciation salesmen's equipment				
Depreciation furniture and fixtures				
Equipment repairs				
Export expense				
Freight on equipment				
Insurance on merchandise				
Material cut for samples				
Postage				
Salaries—clerical				
Salesmen's salaries				
Salesmen's commissions				
Salesmen's supplies				
Sample expense labor				
General selling expense				
Supplies				
Telegraph and telephone				
Transportation				
Traveling				
Trucking and delivery				
Salesmen's traveling expenses				
Total				

Form 10. Selling Expense Budget

Advertising

Date....................

Classification	Budget, May	Billed, May	Balance, May	Accumulated Budget Balance, May 31	Outstanding Purchases, May 31	Budget for June	Available for June
Outside signs							
Newspaper							
Store signs							
Dealer helps							
Export							
Tug-o-war campaign							
Mailing and printing							
Emergency sales help							
Sundry							
Total							

Form 11. Advertising Budget

312 La Fayette Street Factory

Date....................

Classification	Budget Allowance, May, 1922	Expense, May, 1922	Balance, May, 1922	Budget Balance, June 1, 1922
ADMINISTRATIVE EXPENSE				
Carfare......................				
Pattern and drafting expense...				
Postage......................				
Salaries, clerical................				
Stationery and printing........				
Sundry expense...............				
Telegraph and telephone.......				
Traveling....................				
Total....................				
BUILDING EXPENSE				
Depreciation..................				
Insurance....................				
Heat, light, power.............				
Rent.........................				
Janitors and watchmen........				
Supplies and repairs..........				
Taxes........................				
Water and ice................				
Total....................				
CUTTING EXPENSE				
Direct labor..................				
Indirect and supervision.......				
Supplies.....................				
Portion administration expense..				
Portion of building expense.....				
Total....................				
MANUFACTURING OVERHEAD				
Depreciation machinery and equipment..............				
Machinery supplies and repairs.				
Royalties....................				
Indirect labor.................				
Sundry expense...............				
Sundry supplies...............				
Transportation................				
Portion of administration expense...................				
Portion of building expense.....				
Total....................				

Each of the 14 factories in this organization has a budget report form. The works manager in charge of each one receives a copy monthly. Of course, the responsibility of the factory expenditures rests on the works manager in charge and he must explain satisfactorily any item exceeding the budget allowance.

FORM 12. Factory Budget

Mismanagement and Fraud

DEFINITION.—Fraud is gross deception or breach of trust operating to the injury of an innocent party. It is usually difficult to prove because it is necessary to secure evidence of intent to defraud or mislead. **Exploitation,** being more subtle than fraud, is more difficult to expose. Ordinarily it does

not provide ground for legal action. Nor are mismanagement and consequent bankruptcy grounds for inferring exploitation, as these may result from **mistakes.** "Exploitation may be said to differ from fraud in that, while the intended results are practically the same, there is always room, in case of exploitation, for varying interpretations of the facts."

The **corporate form** of organization **favors exploitation,** because individuals hide their identity and avoid personal responsibility. The legal fiction of **corporate entity** favors exploitation. Legislation has been slow to cope with new conditions.

FORMS OF ABUSES.—One form of abuse arises out of **personal favoritism** in letting contracts and making purchases. The Interstate Commerce Commission says: "Corporate economy is not practicable where gifts and obligations arising from friendship tend to obscure official duty." **Exorbitant salaries** are a means of exploitation in the hands of a controlling faction. **Secret payments** are sometimes made to avoid openly increasing salaries. These may take the form of a **bonus** omitted from the pay-roll. **Contracts beneficial to officers** are a frequently employed means of exploitation. Sometimes **construction companies** are organized by corporate officials and then manipulated to their own advantage by means of improper contracts. Another plan is to purchase at high prices subsidiary companies in which the officials of the purchasing company are interested.

In some cases contracts with other companies in which the officers are in one way or another interested are beneficial, so that it is difficult to affirm exploitation. In so far as possible such relationships should be avoided, but if unavoidable the negotiations should be open. All such contracts should be submitted to disinterested parties for criticism. Officers taking part in the organization of a new concern in a related field should leave the concern in which they have previously been interested.

Officers sometimes try to avoid losses in unprofitable enterprises by unloading their holdings upon the company. If they are active and influential they are likely to succeed, especially if the directors know little about the details of the business.

Sometimes officers in a company secure control of another company by inducing their board of directors to acquire stock therein which, along with their own personal holdings enables these officers to control the other company.

Misuse of inside information is a frequent abuse in connection with speculative proceedings on the stock market. Officers and directors have peculiar responsibilities in respect to speculative operations in the stock of the companies they represent. The fact that they may lose through miscalculation does not negative these responsibilities.

Misuse of corporate funds by officials sometimes occurs, especially in connection with speculative ventures. By trying to bolster up the price of sisal and hemp two officers of the National Cordage Co. changed it from a well-managed enterprise to a speculation. So much capital was tied up in stock of sisal and hemp that the company went into bankruptcy.

Manipulation of accounts is common to secure an overstatement of income, thus bolstering up tottering enterprises. There are many ways of accomplishing this result. The following are examples:

1. Capitalization of expenses.
2. Failure to write off adequate depreciation.
3. Writing up assets and crediting same to Profit and Loss.

4. Padding of inventories of merchandise, supplies, etc.
5. Failure to write off bad notes and accounts receivable.
6. Understatement or omission of liabilities.

Sometimes the purpose is to understate earnings. This may be done by:

1. Undervaluing assets.
2. Overstating liabilities.
3. Writing off excessive depreciation.

and, in general, doing the opposite of what is done when it is desired to make a poor income statement look good.

Where there are **subsidiary companies** opportunities to juggle accounts are increased, because the statements of the subsidiaries may not be shown. In this case falsification of their earnings does not appear. If they incur losses these may be omitted and only the results of profitable subsidiaries be brought in. Intercompany sales may be made to swell profits. This results in inflated inventory valuations. One scheme sometimes pursued by corporation officers is to buy stock in subsidiaries when conditions appear unfavorable and later dispose of these shares when, as the result of grossly inflated statements of earnings, the public is induced to buy them at high prices. Properly prepared **consolidated statements** go far toward prevention of these abuses.

Inside information is sometimes made the basis upon which directors buy and sell stock in their own companies. Some financiers approve of this, but the ethical view appears to be that it is wrong for a director to base such action on information which should be, but is not, made public. It is an abuse of trusteeship to profit by the advance information which directors, by the nature of their work, secure.

Stockholders controlling a majority vote sometimes defraud the minority, or exploit creditors. One plan of defrauding minority stockholders is to pay all profits earned into the treasury of a company owned by the controlling stockholders. Another plan is to elect themselves officers and then vote themselves large salaries. **Creditors** are sometimes defrauded by officers who, having bought heavily, sell out, take the proceeds, and then permit the corporation to become bankrupt. This is so grossly fraudulent that more refined methods are usually pursued. Bond issues are sometimes sold on the strength of large surpluses which are later depleted by heavy dividend payments. Sometimes cash secured by sale of bonds is used to pay dividends. Sometimes large dividends are paid without regard to upkeep requirements, resulting ultimately in heavy losses to creditors. Sometimes dividend payments justifiable under more favorable circumstances are continued in bad times with resulting injury to creditors.

Selection of responsible directors is a remedy for many of these abuses. The power to do this is, however, largely theoretical in case of most stockholders because they have neither time nor facilities for making careful investigation of the affairs of their companies.

Four methods of tiring out minority stockholders are given by T. Mulvey, as follows:

1. Piling up huge undistributed surplus.
2. Making a contract with a subsidiary permitting subsidiary to take most of the profits.
3. Paying out profits in form of exorbitant salaries.
4. Selling profitable features of an enterprise to a new company promoted by majority stockholders.

Charter or by-laws should contain provisions controlling such abuses. Mr. Mulvey says:

Salaries may be limited, the dealings with subsidiary companies for the purpose of withholding profits may be regulated, methods of accounting may be devised whereby dividends may not be withheld. A sale of the undertaking may be prohibited, except with unanimous consent. The shareholder has a contract with the company which is made up of the statutes, charter, and articles or by-laws. These may be framed so that exactions or overbearing methods of the majority may be eliminated.

Cumulative voting is a means of securing minority representation on the directorate.

Salaries, contracts, accumulation of surplus, and **sale of assets** may be regulated, if a business is well standardized. But there is the danger of placing hampering restrictions. Moreover, it is hardly possible to make regulations which prevent **misrepresentation** and **misuse of inside information.**

Publicity is the best remedy for these evils. Statements given wide publicity must be accurate and impartial. This serves as a powerful incentive to honest service on the part of officers and directors of corporations.

Financial Involvements

INSOLVENCY.—Somewhat less than 1% of all concerns become insolvent each year. The record for the years 1912-1921, inclusive, is:[11]

	No. of Failures	No. of Business Concerns	Percentage of Failures
1912	15,452	1,564,279	.98
1913	16,037	1,616,517	.99
1914	18,280	1,655,496	1.10
1915	22,156	1,674,788	1.32
1916	16,993	1,707,639	.99
1917	13,855	1,733,225	.80
1918	9,982	1,708,061	.58
1919	6,451	1,710,909	.38
1920	8,881	1,821,409	.49
1921	19,652	1,927,304	1.02

This table does not cover embarrassments settled out of court, or sales of concerns which have grown decrepit and have been sold to men or companies willing to rebuild them with fresh capital. Some concerns become chronic money losers and pass from hand to hand until liquidated or absorbed by some powerful company. In case of many small retail establishments, the owner himself does not know what the results are until he has become hopelessly insolvent.

Economic insolvency exists when liabilities exceed assets.

Bankruptcy exists when this condition is recognized by a court of competent jurisdiction.

A concern may be economically insolvent but not become a bankrupt. **Rigid retrenchment** may bring it back to a solvent condition. Such a condition of affairs may arise in periods of rapidly falling prices because inventories of goods are carried which cannot be sold except at heavy losses.

Technical or financial insolvency sometimes arises as the result of inabil-

[11] Dun's Review, January, 1922.

ity to meet current liabilities when total assets exceed total liabilities. It is the result of **poor financial management,** there being a wrong distribution of fixed and current assets.

Two chief classes of business failure are:

1. Those for which the management is responsible.
2. Outside circumstances for which the management is not responsible.

Under the first class are those resulting from:

(a) Incompetence.
(b) Lack of capital.
(c) Poor credit management, etc.

About 80% of failures are accounted for by this group.

Under the second class are those resulting from:

(a) Competition.
(b) Physical disasters.
(c) General business conditions.

About 20% of failures result from these causes.

Lack of working capital causes one-third of legal insolvencies in the United States. Sometimes lack of working capital results from too rapid growth during which working assets are converted into fixed assets. This is **capital mismanagement.** A given type of business requires a certain **minimum capital** to start right. In each industry these limits are so well known that those who understand the situation will not launch a new enterprise unless sufficient capital is forthcoming.

Overextension of capital assets frequently absorbs cash which should be held in reserve for payment of current liabilities. Under these conditions borrowing is difficult because of the company's poor financial showing. **Merchandise inventories** are sometimes expanded at the expense of a satisfactory showing of cash resources. **Slow collections from customers** after merchandise is sold may have a like effect. **Payment of dividends** when the cash position does not justify it, may cause technical insolvency. **Inability to dispose of refunding securities** owing to money market conditions often results in great stringency in cash and may cause technical insolvency.

PROCEDURE IN INSOLVENCY.—The five possible courses of action are:

1. Voluntary agreement among creditors, confirmed by a court, to some form of settlement of their claims. This is termed a **composition.**
2. Voluntary dissolution on part of corporation, its assets being divided among its creditors.
3. Individual, partnership, or corporation may be adjudged bankrupt and a **receiver in bankruptcy** be appointed to dispose of assets and distribute proceeds.
4. Corporation may secure appointment of a **receiver in equity** who carries on the business and works out a **reorganization plan.**
5. Assignment for benefit of creditors.

Compositions are more frequent in case of small than of large concerns, because it is difficult to get a large number to agree to a plan. It is the most economical and satisfactory plan where practical. In some instances an agreement on the part of creditors to wait one or more years for the satisfaction of their claims is effective. It is well in such cases to place some trusted person in charge to supervise conditions during the critical period of recovery.

Dissolution followed by distribution of assets among creditors is now

common. To do this it is necessary to secure consent of both creditors and shareholders. This is difficult because these parties distrust the officers in charge. **Voluntary dissolution** is, however, often feasible when conditions are unsatisfactory but actual insolvency does not exist. Illustrations are the dissolution of **combinations in restraint of trade** due to court decrees. The procedure consists in gradually closing down, disposing of assets, and distributing proceeds among creditors and stockholders. The U. S. Express Co., although solvent, was gradually losing business because of competition of other companies and the parcel post. It succeeded in disposing of most of its assets to other express companies at reasonable prices and thus avoided serious losses.

Bankruptcy proceedings in the United States are governed by the National Bankruptcy Act of 1898, and its various amendments. Bankruptcy proceedings have two objects, viz., (a) protect creditors, and (b) free the bankrupt from insupportable debt. Bankruptcy is either **voluntary** or **involuntary.** **Railroads, banks,** and **insurance companies** cannot take advantage of the bankruptcy law, because it is against public interest to permit stopping of their operations. National and state banking and insurance acts provide for the winding up of banks and insurance companies. Under the Bankruptcy Act one is insolvent "when the aggregate of his property, exclusive of any property that he has conveyed, transferred, concealed or removed, or permitted to be removed with intent to hinder, delay or defraud his creditors, is not, at a fair valuation, sufficient in amount to pay his debts." To throw a person or concern into involuntary bankruptcy it is necessary that he or it, being insolvent, commit an **act of bankruptcy.** See section on "Bankruptcy, Insolvency, and Receivership."

Owing to the wastefulness of bankruptcy proceedings it is often preferable to petition a **court of equity** to appoint a **receiver,** who carries on the business under the court's supervision until a **reorganization plan** is worked out. In some jurisdictions the petition is known as a **bill in chancery.** Any one of the following parties may present the petition:

1. The corporation itself
2. The stockholders
3. Secured creditors
4. Unsecured creditors

Applications by stockholders are made but infrequently. **Friendly creditors** frequently make application, requesting the court to appoint one of its own officers or some person close to the management as receiver. This is known as a **friendly receivership.**

POWERS AND DUTIES OF RECEIVERS.—A receiver in bankruptcy takes possession of property of the insolvent, disposes of it as quickly as possible, and distributes the cash realized. A **receiver in equity** continues the business in operation with as little loss as possible. He introduces as many economies of operation as possible and endeavors to place it on a profitable going basis. Concerns which are **technically insolvent** but whose assets exceed liabilities are usually handled in this way. It is the best procedure in case of practically all forms of undertaking, including banks, insurance companies and railroads.

A receiver acts under direct authority of the appointing judge. The receiver ordinarily secures special authority from the court for all acts which fall outside the ordinary routine of business. **Receiver's certificates** are securities issued upon such authority and rank ahead of all other claims.

The receiver's powers of management are extensive. He purchases new equipment, finds new markets, and establishes improved systems of operation. If very successful he may be made an executive of the reorganized concern. Receiverships are frequently of 2 or more years' duration. Occasionally the results of receivership are so bad that a reorganization cannot be worked out and it becomes necessary to wind up the business; but frequently the extensive powers given receivers result in benefit.

CORPORATE REORGANIZATION.—Reorganization consists in the tearing down of an old concern and the use of the materials to reconstruct a new one. A **financial reorganization** consists in the rearrangement of liabilities so that dividend and fixed charges will conform to earning power. To attain a successful reorganization it is necessary to secure the assent of both the court and a sufficient number of security holders. The various, and oftentimes conflicting interests are represented by creditors, stockholders, and banking houses who underwrite the new plan. Within these general groups there may also be conflicting interests, as where there are various classes of bondholders possessing various liens. Naturally the most influential security holders are owners of **prior lien bond issues;** next, the holders of **junior lien issues.** These bondholders usually make their wishes effective by having as their representative a reliable banking house which acts as their advisor. The stockholders, in drastic reorganizations, may have their claims brushed aside. On the other hand, the stockholders, if needed to supply additional capital, may be given some voice in the reorganization. Before a plan can become effective the consent of a high percentage of bondholders of all issues is essential. For this reason **free discussion** of the situation is usually desirable.

Protective committees of the security holders are formed as soon as announcement of insolvency of a large concern is made. Each security issue usually has its separate committee, but one committee may represent two or more issues if their interests do not conflict. A committee usually consists of a group of self-appointed individuals who seek to gain the authority of their fellow security holders to act for them. The members of these committees are paid substantial fees and membership is usually regarded as an honor. In some small reorganizations, however, these committee members serve without compensation. Attorneys' fees must in any case be paid; also the reorganization managers and trust companies or banks which act as depositaries of securities must be paid. **Other items of expense** are accountants' services, costs of advertising and circularizing, receiver's fees and those of his consulting attorneys. The **total cost** of **reorganization** is heavy.

These committees, in consultation with the receiver, usually agree to form a **reorganization committee,** which consists of at least one representative of each separate interest. This committee, after various conferences and negotations, devises a **plan of reorganization.** When the number of security holders is large the committee method of reorganization is the only practicable one. Even in small corporations the plan sometimes saves trouble and expense.

The **first step in reorganization** is an **examination and analysis of the accounts.** To determine actual income and expense it may be necessary to reconstruct the accounts over a series of years. Any plan of reorganization must await the results of this examination before being thrown into final form. The **second step** consists in securing agreement of the various committees to the proposed plan. This usually requires much time because the

members of these committees are occupied with various other interests. The **third step** is the conduct of the company by the receiver as economically as possible. He raises new capital, improves the operating organization, and disposes of non-essential property. The **last step** consists in putting the new plan into operation. It is customary, although not necessary, to organize a new company and sell the property of the old company to the new one. If this is done the reorganization committee turns in the securities of the old company in payment for the property, issuing securities of the new company in exchange. Non-assenting security holders, under these conditions, are liable to find themselves interested in a company which is practically non-existent.

WORK ACCOMPLISHED BY REORGANIZATIONS.—Specific ends to be attained are:

1. Raising of additional capital needed and subsequent operation of corporation.
2. Reduction of fixed charges.
3. Simplification of financial structure.
4. Increasing facilities for raising capital in future.
5. Elimination of unprofitable lines.
6. Liquidation or refunding of urgent obligations.
7. Caring for unpaid dividend accumulated on preferred stock.

Ordinarily the **most urgent task** is to secure additional funds either for fixed or working capital. Cash is needed. The three possible ways of getting it or of securing a reduction of indebtedness are:

1. Selling securities on very favorable terms.
2. Assessing bond or stock holders.
3. Liquidation of current indebtedness by issuing bonds or preferred stock in payment.

METHODS OF RAISING ADDITIONAL CAPITAL.—One method of raising additional capital is to **sell securities.** If securities of other corporations are owned these may be available for sale; but usually this expedient for raising capital is exhausted before the receivership occurs. Sometimes there are assets sufficiently free from lien to permit the issuance of new securities which are marketed at a heavy discount. The tendency is to treat old security holders harshly in order to provide issues that are attractive to outside investors.

Assessments are levied on common stockholders in nearly every reorganization, the reward being an interest in the reorganized concern. Occasionally preferred stockholders and junior bondholders are assessed; in short, any security holder not fully protected by marketable assets may be assessed. If he refuses to pay, a new corporation is organized which at judicial sale turns in prior lien securities in payment for property of the corporation, thus automatically wiping out the junior security holder. In return for the assessment the person assessed is usually given new stock of nominal value and possibly something in securities of better grade. In the reorganization of the San Francisco Railway Co. in 1916 an assessment of $50 per $100 par of old first preferred, second preferred, and common was levied. In return stockholders received $50 par of prior lien bonds and a bonus of common stock—the first preferred receiving $100 par of new common, the second preferred $90, the old common $82.

In 1897 the common stockholders of the Houston & Texas Central Railroad Co. were assessed 73% of the par of their holdings.

If the assessment is too drastic it may not be profitable for the stockholder to pay; consequently the assessment should be made sufficiently attractive to secure the money asked. It is the experience of most persons paying assessments in railroad reorganizations that the increase in value of their holdings following the reorganizations has fully justified paying the assessment.

Funding floating indebtedness by issuance of long-term securities is practicable only when the company is fundamentally prosperous and is merely suffering from temporary shortage of cash. This plan was pursued in both Westinghouse reorganizations.

Services of an underwriting syndicate are an essential when cash is to be raised by assessment or sale of new securities. In return for a commission the syndicate agrees to pay assessments of defaulting security holders, taking over the securities such holders would have received had they paid the assessment. If new securities are to be issued the syndicate takes them over on an agreed basis, as is done in case of normal financing of solvent concerns.

REDUCTION OF FIXED CHARGES.—In cutting down fixed charges in reorganizations, the following principles should be noted:

1. Maximum fixed charges after reorganization should not exceed minimum net earnings of the reorganized company.
2. As far as possible fixed charges should be limited to bond interest. Avoid burdensome sinking fund requirements, guaranteed dividends, fixed rentals, etc.
3. The junior lien security holders should take the losses; the prior lien security holders should not suffer unless the reorganization is drastic.
4. The nominal value of new securities received by old security holders should not be reduced greatly below that of the old securities surrendered in exchange.
5. Bondholders who have their claims reduced should benefit by future increased earnings.

In case of 27 industrial reorganizations, reduction of fixed charges averaged 25%.

REORGANIZATION RESULTS.—The tendency is toward **drastic measures** to avoid a recurrence of the situation making reorganization necessary. Frequently **capitalization** is increased, but by substituting for bonds issues having claim on future earnings. Bond capitalization is reduced and share capitalization is increased by a greater amount. **Simplification of financial structure** is aimed at. Many small issues are replaced by a few large ones, and facilities are provided for raising additional capital in future. This is accomplished by securing authorization of issues larger than are required for present purposes. The **deed of trust** usually contains provisions to be met in the way of additional security when new bonds are to be sold under such provision. **Elimination of unprofitable business** is frequently accomplished in reorganizations. Bondholders who have some unprofitable plant as security may be required to reduce their claims, or they may be given the plant, thus letting them out of the reorganized company.

SECTION 17

BANKING AND BANK CREDIT

CONTENTS

Accrual Accounting

Collections

Exchange

Interior Routine

Transit Department

Loan Department

Safekeeping

Auditing Department

(For list of forms, see complete table of contents.)

SECTION 17

BANKING AND BANK CREDIT

Banking Fundamentals

SCOPE OF SECTION.—This section applies mainly to **commercial banks,** or to the **commercial departments of banks.**

PURPOSE OF BANKS.—Many individuals and corporations have surplus funds. Such funds are safely left in banks, ordinarily without charge. The bank pays out money on order and keeps a record of transactions. All business houses and many individuals actively receive and pay money. In some cases payees reside at a distance so that paying actual currency is difficult. It always involves risk of robbery and misplacement. Banks pay funds on order of depositors. Payments are made by drawing checks for the desired amounts. There is no necessity for making change, little or no risk is involved, and the checks furnish an absolute record of payment.

INTEREST ON DEPOSITS.—Usually banks make no charge for this service; sometimes they pay the depositor. On savings accounts banks pay interest, usually 3% or 4%. A few banks pay higher. In cities where competition is keen, interest is paid on checking balances.

The practice of paying interest on checking accounts varies widely. Some banks pay interest on an average daily balance of over $500; others on $5,000 or over. Activity of the account and borrowings are factors considered and the rates paid vary between individual accounts in the same bank. The most common rate is 2%.

MAKING FUNDS AVAILABLE.—Active business men are frequently in the market for funds needed to promote their undertakings. Most businesses are to some extent seasonal, there being periods when business is active, with a large demand for funds, and other periods when a minimum working capital suffices; there are times when collections are slow and others when there is outstanding only a moderate total of accounts.

When a business needs funds to tide it over a peak, or when it can make 8% on money obtainable at 6%, it tries to borrow.

The **bank's business** is to loan funds to those who can employ them profitably and safely. Both factors are necessary.

A bank serves by securing funds from individuals who cannot use them immediately, and turning them over to others who can employ them profitably. The community is thus served by employment of otherwise idle capital.

SUMMARY OF BANKING BENEFITS.—The man who, having surplus money, deposits it in a bank, gains through having a safe place for its keeping and a convenient method of making payments, and through receiving inter-

est. The man who employs extra funds by borrowing gains through having such funds available at reasonable market rates. The community gains by placing of surplus funds in hands of those who use them to pay wages and buy supplies.

Banks profit through renting out funds for more than they cost the banks. The banks' cost is interest paid depositors, cost of service, and losses. In a commercial bank service is the heaviest cost, consisting of wages, taxes supplies, rent, and general operating expenses.

General Method of Operation

RECEIVING OF DEPOSITS.—To attract funds, banks encourage opening accounts and making deposits. The bank takes the signature of the new customer for its signature file. Signatures on checks are compared with these to determine their genuineness.

References are sometimes required of new depositors. Banks are jealous of their reputation and are judged by their customers. A depositor of poor business character harms the bank's good name and, by depositing uncollectible items or overdrawing his account, causes loss and expense.

City banks often require a **minimum initial deposit** to eliminate small, unprofitable accounts. Competition reduces the severity of these requirements. Banks with minimum rules make many individual exceptions.

Banks furnish **passbooks,** in which tellers receipt for deposits, and blank check books. At intervals, generally each month, a statement of deposits received and checks paid, together with canceled checks is given customers. In place of such periodic statement, customers in many banks may leave passbooks for balancing and return of canceled checks.

In **savings accounts** each deposit and each withdrawal is entered in customer's passbook as made and balance is extended. No statement is required.

LOANS.—Banks, to earn profits, must keep their funds employed. Commercial banks do this chiefly by means of loans to business borrowers on 30 to 90 days' time.

Banks are usually anxious to make short-time loans to all who are willing and able to repay them at maturity. They sometimes take the initiative in locating possible borrowers. Generally, however, there is sufficient demand and the banks need only wait for loan applications. With borrowers as askers there is presented an opportunity for making the necessary investigations. These cover both ability and willingness to repay.

Banks, although anxious to loan, cannot afford to take many losses. They scrutinize applicants for credit, eliminating all who present material elements of risk. Financial strength, earning power, security, moral character, and general conditions are factors affecting ability to repay.

RESERVE.—A large part of deposits in commercial banks may be withdrawn on demand. The **first principle of banking** is to have sufficient cash available to meet this demand.

Not all customers of banks ask for their money on the same day. Deposits normally offset withdrawals, so that it is unnecessary to maintain a 100% reserve. The amount to maintain varies with individual banks—their location, connections, kind of customers, and policies.

Banks belonging to the federal reserve system are required by law to keep their **legal reserve** with the system.

Reserve requirements, member banks:

In central reserve city, 13% of demand deposits.
In reserve city, 10% of demand deposits.
Outside central reserve or reserve city (country banks), 7% of demand deposits.[1]

For all banks **reserve requirements on time deposits** are the same, 3%. No legal requirements exist as to amount of cash to be kept in bank's own possession. The Federal Reserve Board may place a bank in the outlying parts of a reserve city, in the country bank class.

For state banks not members of the system, each state has its own reserve requirements. These require that a certain amount of cash be kept in bank's own vaults and that another percentage of bank's deposits be kept either in cash in its own vault or on deposit with approved banks.

In addition to legal requirements banks must maintain **certain reserves** so that their business will be conducted on sufficient margin of safety.

Funds are usually kept on deposit with one or more other banks. These balances earn interest at from 2% to 3% and may be withdrawn on demand. In addition **secondary reserves** are necessary. These are assets which can be converted quickly into cash without disturbing the bank's customers or its general business. United States government bonds or others having a wide and ready market, are the most common form.

To illustrate, a member bank located in a reserve city has demand deposits of $3,000,000 and time deposits of $2,000,000.

10% of $3,000,000 demand deposits	$300,000	
3% of $2,000,000 time deposits	60,000	
Required reserve with federal reserve bank	360,000	
Actual balance with federal reserve bank		$ 390,000
Cash in bank's own vaults		100,000
On deposit with other banks		400,000
Federal reserve collection account		90,000
Loans eligible for rediscount		1,500,000
Call loans		124,000
Bonds		700,000

The only reserve required by law is with the federal reserve bank. The other items are determined by the bank itself. The **voluntary reserves** may vary materially according to bank's policy and type of business.

If customers begin drawing funds faster than they are deposited, banks first pay out cash from their own vaults and then draw on federal reserve bank and on deposits in other banks. Deposits in other cities may be transferred by telegraph.

If withdrawals continue, money is obtained by selling bonds or rediscounting notes. Thus cash is raised quickly without calling in bank's own loans or discommoding customers by refusal to renew.

Call loans and **commercial paper** quickly sold furnish another important class of reserves. These latter investments are often made through the agency of a city bank, chiefly New York. The owning bank may never see the actual paper, holding merely an acknowledgment.

[1] New York and Chicago are the only central reserve cities. There are about 60 reserve cities.

Banking Development in United States

ADVANTAGES OF LOCALLY OWNED INSTITUTIONS.—In the United States the banking system does not follow the European and Canadian practice of having a few large banks with branches spreading throughout the country.

Instead, legislation and custom favor the growth of individual banks. There are now about 31,000 independent institutions.

The **advantages** claimed for this individual system are: locally owned institutions are more interested in community growth; the officers have their money invested and make their homes in the town; dividends are kept in the community where earned; individual banks prevent centralization of power.

DISADVANTAGES OF LOCALLY OWNED INSTITUTIONS.—Many communities depend on one industry, such as wheat-growing or a single factory. In such wheat sections, if crops fail or if market prices drop so that farmers produce at a loss, a local bank cannot collect loans. The bank's customers, being dependent on wheat, draw out funds to meet expenses. The bank facing demands for funds is unable to realize on its principal assets. If such condition continues long, the bank fails.

If the bank's business is spread over several states and industries, a crop failure in one locality is not serious. National banks are not permitted to loan to one borrower more than 10% of the bank's capital and surplus. This restriction, however, does not apply to discount of bills of exchange drawn in good faith against actually existing values. With small banks this restriction may handicap some of its customers. With large banks maintaining branches, individual borrowers can secure the full accommodation which their credit and standing rate.

Federal Reserve System

HISTORICAL BACKGROUND.—Alexander Hamilton organized the Bank of the United States. It was fiscal agent of the government, had authority to issue notes which circulated as money, and had branches throughout the country.

In 1816, 5 years after the expiration of the charter of the First Bank, the Second Bank of the United States was chartered for 20 years. When the charter came up for renewal, President Jackson opposed it and definitely and finally destroyed the central bank idea.

There then sprang up many small state institutions with power to issue notes with circulation privilege. There was little or no supervision.

Gradually control became more strict; state banks were deprived of power to issue notes. At the close of the nineteenth century banks generally were conservative, well-managed, individual institutions; but the panic of 1907, which was a product of our banking system, brought home to the public that having well-managed individual banks was not sufficient to prevent panics.

The Aldrich Commission recommended changes in our banking system to eliminate "banking panics." On the basis of its investigations and reports, the federal reserve system was developed.

PURPOSE OF FEDERAL RESERVE SYSTEM.—One purpose of the federal reserve system is to provide means whereby banks with sound assets

may convert them quickly into cash. If the public knows that banks can obtain quickly all necessary cash, withdrawals due to fear are eliminated.

The federal reserve system is a compromise between the individual and the centralized system.

MODE OF OPERATION.—Member banks may rediscount short-time commercial notes with federal reserve banks. To obtain currency to make such loans, the federal reserve banks use this commercial paper as security for issuing federal reserve notes. These circulating notes are protected by the maturing paper and by a 40% gold reserve. Movements of crops and legitimate transactions create the notes and acceptances used for rediscount purposes.

To illustrate, the Northern National Bank has $3,000,000 in promissory notes. Needing cash to meet demands of customers it rediscounts $500,000 of these with its federal reserve bank. Federal reserve bank credits account of member bank, $500,000. Member bank's indorsement guarantees the discounted paper. Member bank can convert the credit into cash by drawing a check.

Federal reserve bank obtains currency to rediscount this paper by putting up promissory notes deposited by member bank as collateral with agent of Federal Reserve Board. These agents have authority to authorize issuance of federal reserve notes.

Federal reserve bank continues this process as long as it has sufficient gold to meet the 40% reserve requirement. This requirement is a check on rediscounting which became effective in 1921.

NATIONAL BANKING SYSTEM.—From 1836 to 1863 only state banks existed in the United States. The government, to finance the Civil War, desired to enlarge the market for United States bonds and bring stability to the demoralized currency situation. Congress authorized the establishment of banks with authority to issue paper money secured by United States bonds. In 1865, to compel application for national charters, a tax of 10% was levied on notes issued by state banks.

At first national banks confined themselves to commercial banking. In recent years, savings and trust departments have been added.

The law has been so liberalized that the business of national banks is about the same as that carried on by state commercial banks. National banks, however, are under supervision of the Comptroller of the Currency, while the state banks are supervised by state banking departments.

FEDERAL AND STATE EXAMINING SYSTEMS.—To protect the public, it is necessary to provide supervision and examination of banks. Under the national banking system a **minimum capital** is required based on size of the city in which bank is located. Stockholders are liable to assessment to the extent of the par value of their stock holdings, and the bank must make three sworn reports of condition each year, at surprise dates. The Comptroller's office has special examiners who, twice each year, examine each national bank to determine solvency.

The various state banking departments have a similar system. The federal reserve banks also make examinations of their member banks. In addition, the national laws and those of most states require an examination twice yearly by directors. These directors' examinations, although useful, are not as complete as those made by regular examiners, due to lack of time and experience. Sometimes directors hire an outside auditing organ-

ization, thus obtaining a thorough investigation. In a few cities clearing house examiners keep careful check on solvency of member banks.

Outline of Bank Operation

RECEIPT AND PAYMENT OF DEPOSITS.—Banking, briefly sketched, consists of receiving and repaying deposits; keeping a record of the amount owed each depositor; the investment of funds; maintaining investment records; and furnishing various collection and exchange services.

A teller receives the funds deposited, receipts to the customer, and forwards the deposit slip to the bookkeeper (deposit account bookkeeper in large banks) to be credited to the depositor's account. When a check drawn against this account is cashed, the teller sends the paid check to the bookkeeper. It is charged against the account and reduces the balance. By keeping a list of deposits received and items cashed, the teller knows how much cash he should have at the end of the day. A cash count then determines if there have been any errors.

LOANS AND DISCOUNTS.—When money is loaned, a promissory note is received. Information as to the amount of notes so purchased is furnished the bookkeeper at the end of the day. He debits the asset account, **Loans and Discounts.** When payment is received a notice is likewise sent the bookkeeper (general ledger bookkeeper in large banks), who credits the account for the payment on principal. These credit and debit slips, first regarded as memorandums, have come to serve, in many cases, as original entries. Posting is made directly from these slips into the ledger.

When a borrower, in place of taking currency, wishes amount of loan credited to his checking account, the effect of the entries is exactly the same as if the proceeds of the note had been drawn in cash and then deposited by the customer. There is a debit to Loans and Discounts and a credit to depositor. In neither case, whether borrower is given cash or credit on his account, would entries be made to a cash account. The amount c cash at close of business must be counted to get the figure necessary to balance.

INCOME AND EXPENSES.—When the borrower makes an interest payment, the teller writes a slip, called a credit, authorizing the bookkeeper to credit **Interest Income.** When expenses are paid, a debit slip authorizes the charging of **Expense Account.** After posting day's business, the bookkeeper takes a trial balance, including therein the teller's cash count.

When a draft or other item is collected for a customer, a small **service charge** is customarily made. A credit slip is written for the total of such fees. The teller sends this slip to the bookkeeper, who credits it to **Commissions,** or a corresponding account.

As banks increase in size a division of labor is necessary. In expanding the system to cover the division of work, hardly any two banks follow exactly the same methods. Details vary widely, but the same broad accounting plan is followed.

Bank Accounting in Detail

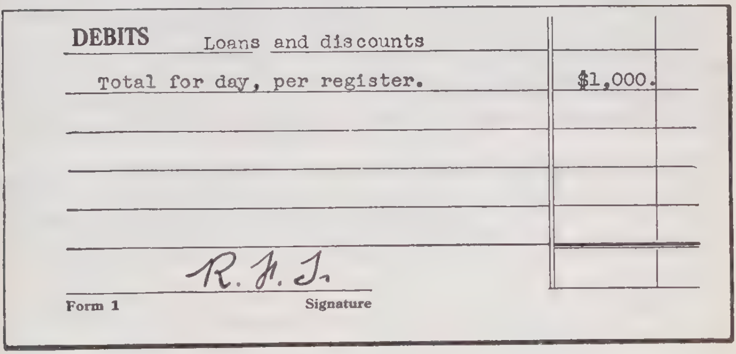
TWO GENERAL DIVISIONS.—Bank accounting consists of two general divisions. The first deals with the records necessary for the control of the bank's assets and the income therefrom, including liability to stockholders,

while the second deals with the records necessary to show the bank's liability to its individual depositors.

Records which deal with the bank's assets follow in scope the same general accounting plan as might be found in a simple holding corporation. The **modifications** come chiefly in the manner of making the original entry and the necessity of always taking a daily trial balance.

ORIGINAL ENTRY—DEBIT AND CREDIT SLIPS.—The original entries in bank work are usually made on slips. A check, for instance, forms an original debit entry. The deposit ticket is another slip which forms an original credit entry. Considering the accounting system in its simplest forms, suppose that John Jones makes a $1,000 loan at the Northern National Bank.

The **note teller** uses a printed slip, possibly 3 x 5 in., with the heading "Debit" (Form 1). On this debit slip he writes the account **Loans and Dis-**



DEBITS Loans and discounts

Total for day, per register. $1,000.

R. H. T.

Form 1 Signature

Form 1. Debit Slip

counts, a brief explanation of the transaction, and the amount, "$1,000." Then for the credit entry he makes up another slip which serves as deposit ticket for John Jones' account.

The **debit slip** goes to the general bookkeeper and is entered in his journal opposite loans and discounts, usually with no explanation. The journal is posted to the general ledger and the amount of loans and discounts is increased. The **credit slip** goes to the individual ledgers and is posted to the credit of John Jones' account. It is there grouped with other deposit tickets and the total for the day is given to the general bookkeeper who enters it in his journal as a credit opposite individual deposits.

If Jones wishes to draw the amount in cash, no credit slip is made. Entries are not made to the Cash account. The contra entry is the only one used. A debit to any other account is automatically a credit to Cash.

The **teller** starts the day with, say, $10,000. Brown makes a deposit of $100 in currency. Brown's deposit slip is a credit entry to individual deposits. The teller should now have $10,100 on hand. Next, a check is cashed for $50 on Smith's account. The check is a debit entry. It decreases the teller's cash, making the net amount that should be on hand, $10,050.

The teller, **to balance his work for the day,** adds to his beginning cash all

the credit items. He counts his cash on hand at the close of the day and to this figure adds his debits. In the example just given, he would add the $100 in credits to the beginning cash of $10,000, making $10,100, and to the closing cash of $10,050 he would add the debits of $50. If the two totals agree, the cage balances. With the volume of work that goes through a busy cage, it is the rule almost more than the exception that the exact amount of cash needed to balance is not on hand at the close of the day. These differences are carried in a suspense account known as **Over and Short** till the close of the current period and then charged off. A record is kept showing each teller's net differences.

Small banks with five or six employees or less, often do not balance the cages separately, but combine the work of the different tellers and strike a balance for the bank as a whole.

JOURNAL.—A bank journal is much the same as that in a commercial house. Entries are made in the journal direct from the debit and credit slips, with little or no explanation. A number of banks are eliminating the journal, posting directly into the general ledger from the slips.

GENERAL LEDGER.—A common form is the **loose-leaf pen-posted book** with a column for debits, a column for credits, and a column for balance. In modern bank work the balance is always extended. **Bound ledgers, machine-posted ledgers,** and **Boston ledgers** are also used for the general books.

DAILY STATEMENT BOOK.—Banks take a **daily trial balance,** having for this purpose a bound or loose-leaf book, printed with the names of the accounts. Such a trial balance is called a daily statement and is kept as part of the bank's permanent record. The officers in well-managed institutions watch the daily statement, noting changes in assets and changes in deposit totals.

Reports of condition for the Comptroller's office and for state banking departments are always called for as of some previous date. The information is taken from the daily statement book.

Asset Accounts

LOANS AND DISCOUNTS.—The most important assets in the ordinary commercial bank are notes. These notes are generally for 90 days or less and one borrower may have many separate obligations owing to the bank. Because of the importance of the asset and the frequency with which the items change, this department requires accurate records.

LOAN REGISTER.—Loans as made are entered on a loan register, usually one line to the loan. At the end of the day the new loans are totaled and a **debit ticket** sent to the general books. A serial number is assigned each note.

When payments are made on notes, the payments are entered in another column of the note register, and an indorsement is made on the note itself. Such payments are totaled at the end of the day and the figure is entered on a credit slip. Interest payments are handled in the same manner, the credit going to interest income.

In small banks, such items may be entered individually in the journal.

DISCOUNT REGISTER.—Notes discounted may be kept separate from interest-bearing paper by being entered on a separate register. Some banks regard all paper, except demand, as discounted by adding to the principal the

interest that will be due at maturity and computing discount on the total so obtained.

TICKLER.—Each note is entered on a tickler under its payment date. Notices are usually mailed to the makers from 5 to 10 days in advance. The tickler may be a book, cards, or a file, in which a notice or a copy of the note can be filed under the payment date.

The notes themselves are filed alphabetically, numerically, or by maturity dates. The total notes on hand must balance with the control account in the general books. Sometimes notes, as they become due, are sent to another department for collection. Those past due may be kept in a separate pouch in order to come to the attention of the officers responsible for pushing collection.

LIABILITY LEDGER.—As a single borrower may have many different notes owing to the bank and may be indorser on other paper, it is advisable in all banks and customary in those of any size, to maintain a liability ledger (Form 2). This ledger may be in various forms, but with all, the purpose is the same. Under the name of the borrower is shown the total amount of his obligations to the bank, both on his direct line and on his secondary line as indorser. This liability ledger should balance with the control account Loans and Discounts.

Common forms of liability ledger are loose-leaf sheets, cards, and actual copies of the notes filed so as to serve the purpose.

COLLATERAL REGISTER.—On many loans collateral is deposited. As this collateral is held in trust and may run into a great deal of money, it is necessary for the bank to keep a careful record and control thereof. Either the notes themselves show a record of the collateral, or there is supplementary agreement, or the securities are listed on a duplicate or triplicate receipt form.

In addition, banks use various types of **registers for listing collateral.** To check collateral it is best to work from the original entries and, where possible, obtain the borrower's verification. Care must be taken to see that the collateral is genuine, that the market value is sufficient to cover the loan, that the amount agrees with the original entry, that all coupons which should be attached to bonds are thereon or accounted for, and that stock certificates and registered bonds are indorsed so that they can be collected by the bank in case of necessity. Such indorsements may be made in lead pencil.

The bank is not ordinarily allowed to take its own stock as collateral.

CHARGED-OFF ITEMS.—Conservatively managed banks charge off all assets which become bad or doubtful.

Such items when charged off are debited directly against **Undivided Profits,** or against **Profit and Loss.** The explanation is shown in detail on the general ledger. The note itself should be kept in a special **charged-off file** or envelope in the vault. The auditor should verify all such entries, see if they were authorized, and see if the actual notes are on hand. Payments of principal or interest made after date of the charge-off should be credited to the Undivided Profits account. The indorsements on the notes should be gone over to see that such credits have been made.

CASH AND DUE FROM BANKS.—On a condensed statement this heading is used to cover actual cash, cash items, clearing house items, cash collection items, lawful reserve with the federal reserve bank, collection items with the federal reserve bank, cash items in transit, and balances due from other banks.

Actual cash is principally a problem of counting. Foreign currency, if the amount on hand is small, may be carried either at par or cost. If the total of foreign money is of any size, it should be carried at cost or market, whichever is lower, though so doing requires care in verifying the book figures.

Cash items merit special attention. It is a "catch-all" account. If a check has been cashed for party without an account and the check comes back unpaid, it may be carried in cash items for a few days while an attempt is made to recover from the indorser. This is only one of the many causes for items being carried under this heading. The danger is that such items will stay there in place of being charged off; that unauthorized loans will be carried; or that checks will be held in place of going on the books and showing an overdraft. All items, before being permitted to go as cash items, should bear the approval of an officer and the account should be checked through frequently. There is no ledger account for cash items, such items being run each day and used to balance as would a corresponding amount of cash.

Clearing house items represent checks drawn on banks that clear through the local association. All such items are to be paid in the clearing house settlement of the following day.

Cash collection items are local items that are collected by messenger. All items so carried should be current.

When checks drawn on out-of-town points are deposited with the federal reserve bank, immediate credit is not given the depositing bank. The items are put in a **collection account.** The country is divided into zones according to the number of days required to make collection. If the check is drawn on a 2, 4, or 8-day point, the amount is switched from the collection to the reserve account automatically at the end of that time, even though in the particular case there might have been required more or less than 2 or 8 days. The member bank should keep a record showing under each date the amount that will come available as reserve.

The bank gives the customer, in most cases, immediate credit and then sends the item to the federal reserve or to another bank. If sent to a bank, which is not a correspondent, for collection, the amount sent will be charged to the **Transit account,** or **Due from Other Banks—Collection account,** pending the receipt of payment. When sent to a bank that has funds on deposit with the sender, the same practice may be followed, the debit to the correspondent's account not being made until advice is received or days required to reach correspondent have elapsed.

When funds are on deposit with another bank there is usually carried a separate general ledger account for that bank. As soon as items are mailed to a bank with which funds are deposited, that bank is debited even though the items may be in the mail for several days. It is figured that drafts drawn on the account will take at least as long in transit before being presented for payment.

BONDS AND WARRANTS.—Banks ordinarily own a number of different issues of bonds. It is customary to use a **subsidiary ledger** with an account for each issue. In this subsidiary ledger is shown both the par and the book value. Thus if a $100 Province of Manitoba bond is purchased for $98, a debit ticket for $98 is made to bonds and warrants in the general books and a subsidiary ledger account opened. In the subsidiary ledger account there is a debit column for the par entry of $100; a debit column for the book figure of $98; and final columns for extending both par and book balances.

As the **control account** does not cover par figures, it is probable that

SHEET NO. 1

NAME Jones, John H.

CREDIT LIMIT $15,000.

ADDRESS 322 East 11 street

Date 1924		Memoranda: Endorser or Maker	No.	Rate	Date Due: Mo.	Day	Yr.	Date Paid: Mo.	Day	Yr.	As Maker: Debits	Credits	Balance	As Endorser: Debits	Credits	Balance
MAR	5		35739	6	5	4	24	5	5	24	5000 -		5000 -			
	7	Harry L. Smith	35899	7	6	3	24							4000 -		4000 -
Apr	9		36223	6	7	9	24				6000 -		11000 -			
May	5		35789									5000 -	6000 -			

FORM 2. Liability Ledger

Names	Balances		Monday 19 Checks in Detail	Total Checks	Deposits	Balances	Tuesday 19 Checks in Detail	Total Checks	Deposits	Balances	Wednesday 19 Checks in Detail	Total Checks	Deposits	Balances	
		1													1
		2													2
		3													3
		4													4
		5													5
		6													6
		7													7
		8													8

FORM 3. Boston Ledger

errors will creep in. To find such errors or prove there are none, it is necessary to check back each par entry and par extension. It is not a sufficient check on the bonds on hand merely to see that the total agrees with the par balance called for by the **subsidiary ledger.** It is necessary to verify the par figures as shown.

With **coupon bonds** it is important to see that all not-due coupons are attached. If an audit is being made, see that the proper amount of interest was credited on interest dates and on sales to the income account.

Warrants, when carried as a bank asset, are merely checks drawn by a county, city, or other political subdivision, which checks are not paid for want of sufficient funds. Under state laws these warrants draw interest from date presented and stamped "Not paid" to the date on which called for payment. The rate varies in different states. As interest ceases on the date the warrant is called for payment, it is frequently necessary for the holding bank to investigate whether any of the warrants in its possession have already been so called.

BOND DISCOUNT AND PREMIUM.—Banks that have purchased bonds at a discount do not ordinarily amortize the discount on a so-called scientific basis, although savings banks are sometimes required to do so. Following the principle of always being conservative, the banks continue to carry the bonds at their cost figure until paid at maturity or until sold. At that date the entire profit is taken up as an earning.

In case of **bond premium** the practice is reversed. Here banks may write down the premium more rapidly than would be called for under an amortization plan. The practice varies among institutions. Some banks carry all bonds at par irrespective of cost.

FURNITURE AND FIXTURES.—Banks quite generally write down Furniture and Fixtures account to materially below the depreciated value. Many banks go so far as to write the furniture and fixtures entirely off, or merely show a nominal figure. New purchases are often charged directly against expense. For income tax purposes this practice of writing down furniture and fixtures arbitrarily or charging purchases to expense is not permitted. Where such has been done it is necessary to go back and set up a supplementary record from as good data as there is available and charge off depreciation on some fair basis. Charging depreciation on supplementary records is permitted banks by a specific income tax ruling.

REAL ESTATE.—Banking laws generally prohibit a bank from owning any real estate except that which it occupies for its home and such real estate as may have been acquired to protect loans previously made in good faith. National banks and state banks of most states are required to dispose of the property acquired for debts within 5 years or entirely write the amount off the books.

A subsidiary ledger account is usually opened for each piece. Some institutions debit carrying charges and credit income directly against the Real Estate account on the theory that the land is not carried as an investment but only till it can be disposed of, at which time the net profit or loss will be accounted for. The better practice is to charge carrying costs against expense as incurred. This is required on income tax returns.

STOCKS AND SECURITIES.—Items in this account are principally those that have been acquired on foreclosure. Real estate may be so carried up to the time the mortgagor's right of redemption expires. Under restrictions,

banks are permitted to subscribe for and hold stock in international banking organizations or to own stock in subsidiary companies.

Liability Accounts—Owing to Customers

DEPOSITS.—The most **important liability** of a bank is its deposits. A bank is the only institution that boasts about its liabilities. The reason is that the deposits measure the confidence which the community has in the bank, and determine the institution's influence and potential earning power.

As banks are dependent on public confidence, they must use every care that depositors' accounts are accurately kept. Most accounts can be withdrawn on demand. It is of first importance that all entries be posted up to date so that the bank may know instantly the amount a customer is entitled to withdraw.

So important is the balance, that modern bank ledgers, almost universally, contain space not only for debit and credit entries, but also for the balance. This balance may be extended with each posting or, as is usual, at the end of each day.

COMMERCIAL DEPOSITS.—A commercial deposit is subject to check. The customer may draw all or any part of it without warning. Ordinarily the account is active, with frequent entries. The bank is responsible for the genuineness of the checks which it charges against the account. It must ordinarily refuse to pay checks presented over the window, or send back checks coming through the clearings, if the balance in the account is not sufficient. Special arrangements are sometimes made to permit overdrafts. In doing this, time is a material element. Clearing house items must go back by a definite hour, usually about the middle of the afternoon, or not at all; money once paid over the counter is difficult to recover.

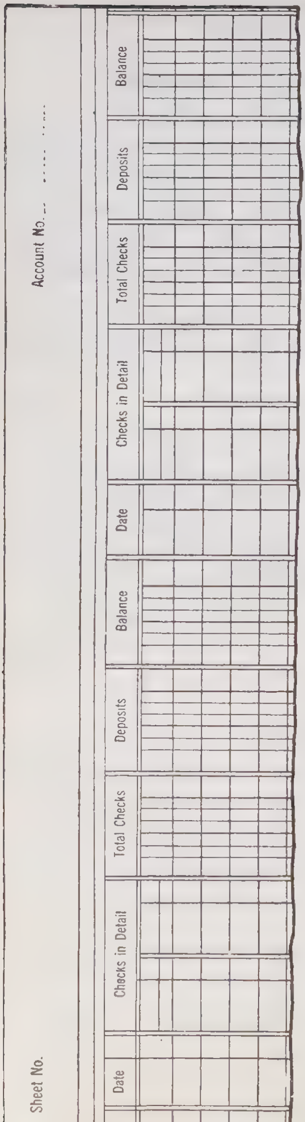
INDIVIDUAL LEDGERS.—There must be an **individual account** with each commercial depositor. These accounts are kept in what is actually a subsidiary ledger, with a control in the general books. Owing to the volume of transactions these individual books dwarf in comparison all other parts of the bank's accounting system.

There are **three principal types** of individual ledgers in use: the Boston ledger, pen-posted loose-leaf ledger, and the machine-posted ledger. The Boston ledger (Form 3, p. 871) is probably the most popular type in New England and New York, being quite generally used by the large New York banks. It is customary to print the depositor's name, leaving blank lines for new additions. The balance in every account must be carried forward each day, whether the account moves or not. The footing of the balance column is a daily proof that the ledger total is correct. When there are a number of checks on an account, an adding machine tape may be made with only the total posted to ledger.

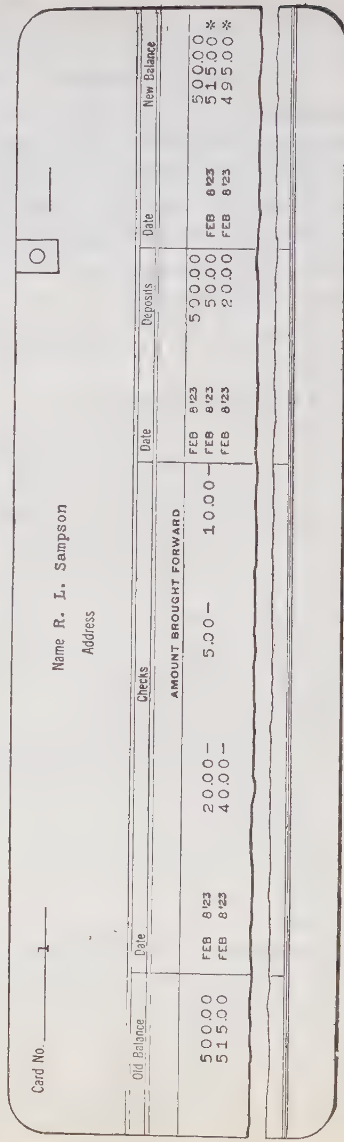
EXPLANATION OF DIFFERENT TYPES OF CUSTOMERS LEDGERS.—The pen-posted loose-leaf ledger (Form 4) is not as widely used as either the Boston ledger or machine-posting.

In case of the machine-posted ledger the machine used in posting to the ledger (Form 5) automatically subtracts any entry made in the check column and adds any entries made in the deposit column, printing the result to the right under "balance."

When the next entry is made, either the following day or a month later, this balance is picked up and carriage moved so as to print in the old balance



FORM 4. Loose-Leaf Pen-Posted Ledger Sheet



FORM 5. Machine-Posted Ledger

column to the left. The machine then automatically jumps to the check column. Items entered there will subtract. The carriage then goes to the deposit column and then to the balance column on the right.

Common method of proof is to give the same items to a second bookkeeper who posts the statement. The statement is arranged in the same form and is virtually a duplicate of the ledger. After posting an account, the bookkeeper offsets the sheet. The statement clerk does the same. After both have completed their work, they call back the new balances on these offset accounts. If one of the two has made an error by picking up the wrong old balance, writing a check or deposit wrong, or posting to the wrong account, the new balance which he obtains will not agree with the new balance obtained by the other.

When checks are large enough to cause an overdraft the machine locks, thus automatically bringing the overdrafts to the bookkeeper's attention. If he wishes to permit the overdraft, he presses the subtract lever and the balance is written with the letters opposite "O. D."

A **separate control** is kept, usually as a supplementary record, of every 400 or 500 accounts. Checks and credits are sorted to these divisions. In listing these sorted checks on the adding machine, totals are obtained for charging or crediting the control balance.

OVERDRAFTS.—Well-managed banks try to eliminate overdrafts, but this ideal is rarely realized. Where overdrafts do not show on books, it is possible that they are covered by checks, being carried as cash items or otherwise, instead of being charged against the customers' accounts.

American banking is run on a speed basis. Thousands of items must be handled in an individual bank in a few hours. The labor cost per item must be held low. Checks come in in the clearings against an account, and on the same day other checks are cashed over the counter. Immediate credit is ordinarily given on checks deposited. The customer draws against this credit. Sometimes the item deposited comes back unpaid. It is the best practice to charge this item back against the customer, even though so doing overdraws the account, since with the account shown as being overdrawn, no more checks will be paid.

Usually, however, the overdrawing is done with the knowledge of the bank. Many customers are careless in keeping a record of their balance. They issue more checks than there are funds to cover. The bank, considering the customer's credit good, pays the item, instead of marking it "not sufficient funds" and thus stigmatizing the depositor among the people with whom he does business. Overdrawing from any cause is objectionable and should be held to the lowest practical minimum.

In making official reports banks are called on to show the full amount of the deposit liability, without deduction for overdrawn accounts. The control account, when posted merely from the totals of debit and credit entries, shows only the net amount. It is necessary, therefore, to run the overdrafts and add them to the total of deposits shown by the control. The overdrafts are then shown on the asset side, either as a separate item, or combined with loans and discounts. There is no way of determining the correctness of this overdraft figure except by a run of the ledger on the particular day.

VOUCHERS.—Deposit tickets and checks are the ordinary items posted to individual accounts. Most banks that use bookkeeping machines no longer journalize, but post direct to the ledger. An adding machine list

is made to prove the work before it goes to the bookkeeper. These lists are preserved. If an item is to be traced, it is necessary to look for the particular amount and the identification is seldom positive; there might be other items the same day with the same figure.

This difficulty proves serious in so few cases, compared to the volume of work handled, that it is only here and there that a bank goes to the additional work and delay of describing the entries.

Debit items, consisting of checks and charge tickets, are usually perforated with the date by a canceling machine and filed alphabetically. They are returned to the customer with the statement or when passbook is balanced.

The credits are retained by the bank. The filing is by dates and alphabetic under the dates.

STATEMENT AND PASSBOOKS.—When the checking system first began to assume its present form and magnitude, the theory was that the passbook was the depositor's record of the account. All deposits were entered therein. The depositor was requested to leave the book at intervals and the checks which had been paid would be entered as a total and the balance brought down.

There are some objections to this system. It is difficult to get all depositors to leave their books regularly. By turning over his book to the bank, the customer temporarily loses possession of his receipt for deposits made. As the majority of books are left at the first of the month, a peak load is thrown on the balancing force.

To meet these objections, many banks have adopted the **statement system.** The passbook becomes merely a convenient method of issuing a receipt for deposits. It is always retained by the customer. Checks as paid, or on the next day, are entered on a statement sheet, which is virtually a duplicate of the ledger. At the end of the month the vouchers are taken from the check file, folded with the statement, and the whole either mailed or placed in a a **statement file,** where the customer may obtain it whenever he calls.

A few banks use carbon copies of the ledger sheet for statements. Some German banks photograph the ledger account. With American banks, the most common form is the duplicate posting system.

DUPLICATE POSTING SYSTEM.—While bookkeeping machines are not a necessary part of the duplicate posting system, most duplicate systems are machine-kept. Even where the ledger is posted with pen, machines are frequently used for the statement.

Every entry is first posted on the ledger. A different person, working entirely independently, then takes the same items and posts them to the statement. The accounts that have moved are marked, ordinarily by offsetting, and the ledger balance of each of these accounts called back against the statement balance.

If the calling back is done accurately, no error can go undetected unless both bookkeepers have made exactly the same mistake. This method furnishes a protection against posting to the wrong account, one of the most difficult protections to get. In practice this system has proved very satisfactory from standpoint of accuracy. Even with help not fully trained, undetected errors have been infrequent.

On the last day of the month, or when called for by the customers, vouchers are assembled with the statement. Some banks at that time do not check the vouchers at all, but depend on the accuracy of the original check filing. Others check each voucher against the entry on the statement. Still others count the number of vouchers and the number of debit entries,

and possibly glance through the signatures. Banks in some sections take a receipt for the vouchers and require a postcard be returned within 10 days stating that the account has been reconciled. In other places the postcard is omitted. Elsewhere no receipt is obtained, the statement being handed or mailed out without a record.

CERTIFICATES OF DEPOSIT.—Checking accounts, as the predominating form of banking, are a development of hardly a hundred years. Far more ancient are **certificates of deposit,** dating back to the birth of banks and almost before. The goldsmiths that issued negotiable receipts for the bullion and coin left in their possession were issuing the same type of document which we now have as certificates of deposit.

The bank issues a receipt for money deposited. These receipts may be either payable on demand or after a certain time, and may or may not bear interest. Due to the different reserve requirements, demand certificates outstanding are usually kept in a control account separate from time certificates.

The common practice is to have these certificates numbered serially, there being a different series for time certificates than for demand. As issued an entry is made in a register. At the close of the day a credit is sent to the general books for the total. As the certificates come in for payment they are charged directly against the general ledger control account and the date of payment stamped in the register. If an interest payment is involved, a debit to interest expense or to the interest reserve account, is made.

To prove the account, the canceled certificates are compared with registry entries, to see that every certificate marked "Paid" is canceled and on hand. Then all unstamped entries should be outstanding. Such items are run and the total compared with the control figure.

In most city banks in the United States, certificates of deposit do not form a large percentage of the deposits. In many country districts they still mount to important totals.

The certificates are negotiable and it is not customary for the bank to keep a ledger account with the individuals to whom issued. Where such records are kept it is more for information as to the amount of business being obtained from an individual than for strictly accounting purposes.

CASHIER'S CHECKS.—A cashier's check is a draft drawn by the bank on itself. Payment cannot ordinarily be stopped if the check in due course comes into the hands of an innocent holder. Cashier's checks are issued when the bank itself pays expense bills or makes nearby remittances. They are also issued in exchange for cash at a customer's request, when either the customer does not have a checking account or his personal check would not be acceptable.

There is a **control account** in the general ledger and the system of issuing and proving is practically identical with certificates of deposit. In some small banks cashier's checks are issued in lieu of demand certificates of deposit.

CERTIFIED CHECKS.—Personal checks are not always acceptable. The party to whom presented does not know but that payment may have been stopped or that there may not be sufficient funds to cover. To remove any question the check can be presented to the bank. If it is good the bank will stamp across it "Certified" or "Accepted," and have the certification signed by an officer. Such a check becomes an obligation of the bank, the same as a cashier's check. Payment cannot be stopped.

The bank charges the customer's account immediately and makes an

entry of the transaction in a register, similar to a certificate of deposit register. The total of checks certified is credited to the **Certified Checks account.** As such checks come in for payment, they are charged against the Certified Checks account, but not against the individual drawer. The canceled items are not ordinarily returned to the drawer, but are held by the bank so that "paid" notations in the certified check register may be verified.

Certified checks are an important element in stock-broker's settlements and as an evidence of good faith in bidding on government or municipal propositions. If certification is obtained by the payee or subsequent holder, the drawer is released from liability, but not if the drawer obtains the certification.

SAVINGS DEPOSITS.—The Federal Reserve Act defines savings accounts as those governed by the following conditions:

1. The passbook, certificate, or other form of receipt must be presented to the bank when a deposit or withdrawal is made.
2. The depositor may be required to give notice of not less than 30 days of intended withdrawals.

In some states only mutual savings banks are allowed to use the word "savings." Where such a law exists, other banks call their savings department "special interest department" or "thrift department." For banks doing both a commercial and savings business, a few states require that the savings department assets be segregated. Savings deposits can only be invested in specified types of securities. Such securities must be labeled "savings department." If a bank liquidates, the savings depositors have a prior lien on the savings department assets. National banks are not required to make such a segregation. In normal times savings banks do not enforce the option of requiring notice on withdrawals. The right to notice is retained in the rules, however, as its elimination would mean that under the law the reserve requirements would then become the same as for demand deposits.

Savings department methods vary widely between different banks in different sections. The following methods are used in many banks. Paying and receiving is done by the same tellers. Customers make up their own deposit and withdrawal slips. On a deposit the teller enters the amount in the passbook and extends new balance. On withdrawals he first verifies the signature, then checks with the bank's ledger, makes the passbook entry, and pays the money. At end of day, or several times during day, the teller runs his withdrawal and deposit slips, using the totals to balance his cash. After the cash has been balanced, the slips from all cages are combined; then sorted numerically and grouped according to divisions of the ledger. The ledger, for convenience in proving, is divided into sections containing from 500 to 1,000 accounts each. A journal sheet is made on an adding machine. There are three columns—one for account numbers, one for debits, and one for credits. A total is obtained of each column. The tickets are then posted, each account being marked either with a marker or by pulling the ledger card. Then, working from the accounts themselves, the old balance and the new are run. The total of the account numbers as secured from the ledger must agree with the total of the account numbers obtained from the run of slips on the journal sheet. This is proof of posting to the right account. The difference between the old balances and the new balances must agree with the difference between the debits and credits. This proves that posting and extensions are correct.

Some banks require the customer to first present the withdrawal to the bookkeeper, who posts the amount and "O K's" the item. The customer then presents it to the paying teller. Other banks have the tellers write all deposit and withdrawal slips.

Ledgers are usually numerically arranged by account numbers. They may be pen-posted cards, machine-posted cards, loose-leaf pen-posted ledgers, or bound ledgers.

GOVERNMENT, MUNICIPAL, AND OTHER OFFICIAL DEPOSITS.—For such deposits the bank nearly always is required to put up security. Security may be government or satisfactory municipal bonds, or a surety bond issued by a reputable company. Interest is paid and deposits ordinarily are withdrawable on demand. Refunds may be obtained on surety bond premiums if deposits do not average the amount of bond.

LETTERS OF CREDIT.—A letter of credit (Form 6) is a formal document in which a bank agrees to accept a customer's draft or drafts up to a definite total. Various conditions may be attached, such as the requirement that bills of lading covering specified items be attached to draft. Letters of credit are issued for cash or on the customer's guaranty to reimburse the bank.

If issued on credit, the bank debits an account, **Customer's Liability under Letter of Credit,** and credits **Letters of Credit Outstanding.** Letters sold for cash are separated from those sold on credit. A separate liability account for cash letters is opened under the name of **Travelers' Letters of Credit Outstanding** or **Circular Letters of Credit.** When a bank pays a draft drawn under a letter of credit, a debit is made to the proper letters of credit outstanding account. If the letter is one that has been issued on credit, the customer's individual account is charged or the money collected by messenger, and the account, Customers' Liability under Letters of Credit, is credited.

BANKERS' ACCEPTANCES.—Under arrangements, the bank may accept drafts drawn on itself with a future maturity. These acceptances, being the obligation of the bank, may then be sold by the holder to other banks, sold in the open market, or sometimes taken up by the accepting bank itself. Acceptances are an important element in European banking and the Federal Reserve Board has encouraged the use of this type of paper here.

CONTINGENT LIABILITY.—Banks sometimes sell notes to other banks with the agreement to repurchase; or have one of their customers borrow direct from a larger bank with the understanding that if payment is not made at maturity the requesting bank will take up the obligation. In all cases where the actual liability exists, it should be shown on the general books.

BANK ACCOUNTS.—Large banks in reserve cities secure a material proportion of deposits from other banks. These bank deposits are kept in a separate ledger. The statement of account sent the depositing bank, either daily or monthly, is ordinarily more detailed than that furnished commercial depositors. Draft numbers and an explanation of the credits are shown. Interest is usually paid.

CIRCULATION.—National banks, on depositing as security specified government bonds, are permitted to issue national bank notes. If the market price on the government bonds bearing circulation privilege is not too high, this right is a source of profit to the bank as well as an advertisement. The amount that can be issued is limited by the par value of the bank's stock and by the par value of securing bonds. The bank is required

First National Bank of Seattle

No.______ Circular Letter of Credit. $______ U.S.

Seattle, Washington, ______________ 19__

To our Correspondents and other
Banks and Bankers.

Gentlemen;

We beg to introduce to you, and to commend to your courtesies ____________________ in whose favor we have opened a credit of ____________________ Dollars U.S. Currency, and whose drafts to that extent, at sight, upon the

FIRST NATIONAL BANK
OF SEATTLE

we engage shall meet with due honor, if negotiated prior to ____________

The amount of each payment must be endorsed on this letter, and your negotiation of the drafts will be considered a guarantee that the requisite endorsements have been made.

You will please observe that all such drafts be marked as "Drawn against The First National Bank of Seattle, Wash. Letter of Credit No.______"

This letter must be attached to the last draft drawn.

We remain, Dear Sirs,
Yours faithfully,

Signature of

____

____

THE FIRST NATIONAL BANK
OF SEATTLE

____
VICE PRESIDENT

____
CASHIER

FORM 6. Circular Letter of Credit

to maintain 5% redemption fund with the Treasury Department at Washington and pay semiannually a tax on the average amount of circulation it has outstanding. The rate is ¼% if the bonds securing are 2%, and ½% if the bonds securing bear a higher rate.

DIVIDENDS PAYABLE.—When a dividend is declared a charge is made to **Undivided Profits** and an account, **Dividends Payable,** credited. Checks marked "Dividend check" are issued. As these checks are paid they are charged against the Dividends Payable account. If all checks were cashed promptly this account would be closed out within a few days.

Capital and Liability Accounts

CAPITAL STOCK.—So far as accounting records are concerned, a bank's stock record is the same as that for any other type of corporation. For national banks, however, there is a real difference in case of liquidation. Stockholders can be assessed 100% of the par value of their holdings. When stock has been transfered within 60 days of the bank's failure, the selling stockholder may be held liable for unpaid portions of the assessments. This is in addition to the original obligation to pay for subscribed stock. Many state laws carry the same provision.

Capital stock must be fully paid in. Before the amount can be increased or decreased permission must be obtained by national banks from the Comptroller of the Currency. The minimum capital permitted is based on population of city in which located.[2]

SURPLUS.—Banks ordinarily start business with a paid-in surplus. This amount can only be added to or decreased by action of the directors. The account may go for years without change. A certain percentage of profits must be carried to surplus until it amounts to 20% of capital. Such funds up to 20% of capital may be used only for payments of losses in excess of undivided profits.

UNDIVIDED PROFITS.—Due to the rigidity of Surplus account, it is necessary to have another proprietorship account into which earnings and expenses may be closed, and from which losses and dividends may be paid. The account is called **Undivided Profits.** To find the book value of bank stock it is necessary to add capital stock, surplus, and undivided profit and divide the total thus obtained by the number of shares outstanding.

REDISCOUNTS AND NOTES PAYABLE.—Banks borrow from the Federal Reserve Bank or from city banks by depositing collateral. Government bonds or notes receivable are commonly used as such security. Often a bank rediscounts notes signed by its customers.

REDISCOUNTING WITH THE FEDERAL RESERVE BANK.—The Federal Reserve Bank will accept for rediscount commercial and agricultural paper with a definite maturity. It must be accompanied by the borrower's statement or a certified copy. If the note is interest-bearing, the amount of interest that will be due at maturity is added to the principal. On this new total the federal reserve figures the amount of discount. The discount is collected in advance, only the net amount being credited to the member bank's reserve account. At maturity, unless previously taken up, the notes are charged against the discounting bank.

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[2] Population not over 3,000, $25,000; 3,001 to 6,000, $50,000; 6,001 to 50,000, $100,000; over 50,000, $200,000.

Income and Expense Account in the General Ledger

GENERAL INCOME AND EXPENSE ACCOUNTS.—Due to the necessity of a daily trial balance, banks desire to keep number of accounts in general ledger at a minimum. As a result **income accounts** are usually limited to a few heads:

Interest Income
Commissions
Exchange
Rent Income
Collections
Discounts

Individual banks will of course vary these headings, possibly adding a number of new ones or changing the titles.

Expense accounts will likewise be headed under some of the following titles:

Interest Paid
Taxes Paid
Miscellaneous Expense

SUBSIDIARY RECORDS.—As these general ledger accounts do not give enough detail to satisfy the needs of intelligent administration, or for income tax purposes, banks maintain subsidiary expense records. The most common form is an **expense book,** which is a large columnar journal with from 10 to 20 headings, in which journal are classified the items charged against the general ledger account "Expense." Other banks maintain a **subsidiary ledger.** Some of the headings under which banks itemize are:

Salaries—Employees
Salaries—Officers
Rent
Stationery and Printing
Supplies
Insurance
Advertising
Postage
Telephone and Telegraph
Heat
Water and Light
Express
Transportation of Funds
Clearing House
Exchange
Filing Fees
Revenue Stamps
Credit Reports
Charity
Subscriptions
Miscellaneous

VOUCHERS.—Banks usually pay expense items with cashiers' checks or use a special check called "expense check." In the first case a debit is made to Expense and the contra credit goes to **Cashier's Checks Outstanding;** in the latter case there may be a general ledger account headed **Expense Checks Outstanding,** in which case the debit goes to Expense and the credit to the **Expense Checks Outstanding** account. Some banks follow the practice, when expense checks are used, of not charging expense until the actual check is cashed. In this case the expense checks go to the general bookkeeper and are charged by him directly against the Expense account. The subsidiary records may be posted either before the check is given to the payee, or after it comes in for payment.

Interest

INTEREST ON NOTES.—Rules for figuring interest vary between banks and under different state laws. The following methods are widely used:

When time of note is specified in days, such as 90 days, the actual number

of days elapsed are counted, including the day of maturity but not the first day. The number of days is used as the numerator and 360 days as the denominator. Example—$800 6% note for 30 days dated Jan. 3, would be due Feb. 2. On that date one collects 30/360 of a year's interest. Answer: $4. If the note were paid Feb. 3, 31 days interest (31/360ths) would be collected.

If time of note is expressed in months, each month is considered as though it had 30 days. A 3 months' note dated July 7 would be due Oct. 7 and the interest would be 90/360ths, or ¼th of a full year. When notes call for partial payment or interest payment to be made on a specified day of the month, as the 10th, interest is figured as though all months had 30 days. (1/12th of a year—same for 28- or 31-day months.) Notes maturing on a holiday are due the following business day. The additional interest is collected.

INTEREST ON DISCOUNTS.—On non-interest bearing notes discount is figured on the face of the note, actual days are counted and interest computed on a 360-day basis. If note matures on holiday or Sunday the extra days are added. Practice of using face of note as base is called **bank discount** as distinguished from **true discount.** True discount is based on present worth and not maturity value.

Actual Day Basis.—In place of 360 days, many banks use 365 or 366 as a basis for calculating interest or discount.

Special Points.—The principal is always taken to the nearest even dollar. Transactions with the United States government and the federal reserve banks are figured on the actual number of days in the year, 365 or 366. Delinquent interest is not compounded unless there is an agreement to that effect.

INTEREST ON BONDS.—Bonds are quoted "plus accrued interest." The purchaser pays the quotation and in addition pays interest on the par value at coupon rate from the last interest date. All months are considered as having 30 days. From the 15th of one month to the 15th of the next is always 1/12th of a year's interest. If the interest date is Jan. 1 and the bond is sold Feb. 3, interest is figured for 1 month, 2 days. If sold on the 31st of the month, interest is the same as though sold on the 1st of the following month. From the 15th of any month to the 1st of the next is 16 days.

INTEREST ON CHECKING ACCOUNTS.—The average daily balance is the basis on which interest on checking accounts is paid. An adding-machine tape is made, showing the balance in the account for each day of the month. If the balance remains unchanged for several days the repeat key is used. In a 30-day month there would be 30 items. One day's interest is figured on this total. For 2% on a 360-day basis, point off 3 places, divide by 6 and then divide that answer by 3. To convert this figure to a 365-day basis, subtract 1/73. For paying interest a 365-day basis is widely used.

Many items are deposited, such as checks on out-of-town points, which require from 1 to 8 days or more before the bank obtains actual funds. The customer is given immediate credit, but before interest is computed collection time is customarily deducted. Deposit tickets are marked with number of days required for collection. The amount of item is multiplied by number of days. The total of such amount is deducted from total daily balance. This leaves the net amount on which bank pays interest. The depositor, not knowing the number of days required for collection, can only check the interest received approximately.

SAVINGS DEPARTMENT INTEREST.—Typical rules provide that deposits made up to a certain day of the month, as the 3rd, 5th, or 10th, shall draw interest from the 1st. Deposits after this date draw interest from the 1st of the following month. Money must be on deposit 3 months for interest to be paid. If left for longer time, interest will be paid from date first deposited. Withdrawals are considered as made from balance on hand at start of interest period or, if that is not sufficient, from earliest deposit made during period.

A few banks pay savings interest on the average daily balance. This is not customary, however, and the various restrictive rules tend to reduce the actual rate paid by the bank. A bank with a 4% rate will possibly only average 3.72% interest actually paid on the total deposits. This percentage will vary with the restrictions imposed. Once experience has shown the actual rate, it is possible to forecast closely the total amount of interest on the average of deposits under the same rules.

Outside of a few clearing house associations that set rules for their members, each bank is free to make its own regulations under which interest will be paid. With interest credited twice a year, which is the practice, a large amount of computation and posting must be done at that time in a savings bank of any size. It is often necessary to use help from other departments. Interest is figured and noted on the card in pencil. It is then checked and changes made on account of later deposits or withdrawals. One or 2 days before interest date, interest is entered and extended. A few banks have on their ledger special debit, credit, and balance columns for interest. As each deposit is made, interest is figured on it to the end of the period and added to the previous interest balance. On withdrawals interest is computed to the end of the period and subtracted. At end of period it is only necessary to transfer the interest into main balance of the account. Up to time of this transfer the interest balance is merely a memorandum figure. This method of figuring interest on every deposit and withdrawal reduces the peak at the end of the period, but requires a careful system of checking the computation or it cannot be depended on.

Accrual Accounting

INTEREST EARNED BUT NOT COLLECTED.—Under this heading, banks carry the asset, Accrued Interest Receivable. Under the accrual system, interest earned on notes is computed daily. When a bank changes from the cash basis, it separates all interest-bearing notes from those on which discount has been collected in advance. The accrual on each interest-bearing note is figured. This amount is set up in the book as **Interest Earned but Not Collected** and the **Interest Income account** credited. The notes are then sorted according to the interest rate—all 5% notes together, all 5½% notes together, etc. A total is obtained of each group and entered under the rate in a columnar book (Form 7). When 5% loans are made they are added to the 5% column, and when payments are made on 5% loans the amount is subtracted. Daily interest is figured at 5% on this columnar balance. In the same way 1 day's interest is taken at the rate on the balance in the other columns. The total is the interest earned for the day. It is debited to **Interest Earned but Not Collected** and **Interest Income** is credited.

When interest is paid it is credited to Interest Earned but Not Collected. At intervals, usually once a year, accrued interest is figured from the actual notes. At that time a correction is made in the **Interest Earned but Not**

INTEREST EARNED BUT NOT COLLECTED

DATE	RATES OF INTEREST ....%	....%	....%	....%	....%	....%	....%	....%	TOTAL AMOUNT OF NOTES	DAILY AMOUNT ACCRUED INTEREST	DAILY AMOUNT INTEREST PAID	AMT EARNED BUT NOT COLLECTED
MONDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												
TUESDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												
WEDNESDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												
THURSDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												
FRIDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												
SATURDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												
SUNDAY												
DEDUCT NOTES PAID												
ADD NEW NOTES												

INTEREST AND DISCOUNT COLLECTED AND NOT EARNED

DATE	RATES OF INTEREST ....%	....%	....%	....%	....%	....%	....%	....%	TOTAL AMOUNT OF NOTES	DAILY AMOUNT DISCOUNT EARNED	DAILY AMOUNT DISCOUNT COLLECTED	AMT. DISC. COLLECTED BUT NOT EARNED
MONDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												
TUESDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												
WEDNESDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												
THURSDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												
FRIDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												
SATURDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												
SUNDAY												
DEDUCT DISCOUNTS PAID												
ADD NEW DISCOUNTS												

FORM 7. Form for Computing Interest Earned but Not Collected

FORM 8. Form for Computing Interest and Discount Collected and Not Earned

Collected account. In accruing daily it is not possible to eliminate errors entirely.

A list, giving the par value and the coupon rate, is made of bonds and other securities on hand at end of month. Accrued interest is figured on each issue separately, and account is taken of those issues purchased or sold during the month. The total accrued is added to the Interest Earned but Not Collected account. Or bonds are handled the same as notes, and interest is accrued daily.

Another system is to compute on each interest-earning asset the daily amount earned. The total is the interest earned on such new investments for the day. As new investments are made, the daily interest earned is added to the previous day's total and as investments are sold, paid, or otherwise eliminated, the daily earnings on these items are subtracted. Thus a \$1,000 6% note earns daily \$0.1667, and a \$500 4½% bond, \$0.0625. If these were the only two assets the total earning would be \$0.2292. The next day \$200 is paid on the note, reducing the earning rate by \$0.0333 to \$0.1958.

DISCOUNT COLLECTED BUT NOT YET EARNED.—Under the accrual system banks, when collecting interest in advance, credit **Discount Collected but Not Yet Earned** with the discount so collected. Column balances may be kept as on the interest-bearing paper (Form 8). Each day the earned interest is taken out of this account and credited to **Interest Income.**

ACCRUED EXPENSES.—It is customary to accrue only the larger items such as interest and taxes payable. The calculated amount will be charged monthly against the expense account concerned and credited to the reserve. When the interest or the taxes are actually paid the charge goes against the reserve, and not against earnings.

Collections

DEFINITION.—The term **collection item,** carefully used, means an item which will not be credited to the owner's account until actual funds are in the possession of the bank. Included in this class are drafts requiring acceptance and other papers on which the bank considers final payment a matter of uncertainty. The term is also used for items on which immediate credit has been given the depositor or which belong to the bank and require special attention in securing payment; notice must be sent or a messenger call on the payer. Checks drawn on non-clearing house banks may be so classified.

LOCAL COLLECTIONS.—A record is kept of all items furnished a messenger. On completing his route he either returns an item with reason for non-payment, or turns in the cash or certified checks. A messenger is given specific instructions, leaving him little or no discretion.

OUT-OF-TOWN COLLECTIONS.—These are forwarded to a bank in or near the place where payable. A record is kept, usually numerically. If a report is not received within a few days, mailing time being considered, a trace is sent. One system of records makes use of quintuplicate forms. One copy goes with the items to the collecting bank, a second is filed under that bank's name, a third is put ahead in a date file to be used as a tickler and tracer, a fourth is filed under the owner's name, and the fifth is a permanent record. The collecting bank may remit by draft or, if the sending bank maintains an account with it, credit that account.

Exchange

DOMESTIC EXCHANGE.—A merchant located in California buys in New York. The New York firm is not willing to accept the California merchant's personal check because it will have to pay its bank a collection fee. The New York bank makes this charge because out-of-town checks require additional clerical work and interest will be lost for the number of days required for collection.

To make payment the California merchant goes to his local bank and obtains a draft drawn on New York in favor of the New York firm. In order to issue such draft the California bank maintains an account with a New York bank. The draft is merely a check against this account. A small fee called **domestic exchange** will be charged the California merchant.

Since the establishment of the federal reserve collection system, domestic exchange is not as important as formerly. The federal reserve collects checks without expense, though the bank depositing the item loses interest for number of days required to collect. The customer usually receives credit at once or next day and may be charged **exchange** to cover interest for days the item is in transit. In many cities banks now receive on deposit out-of-town checks without charge.

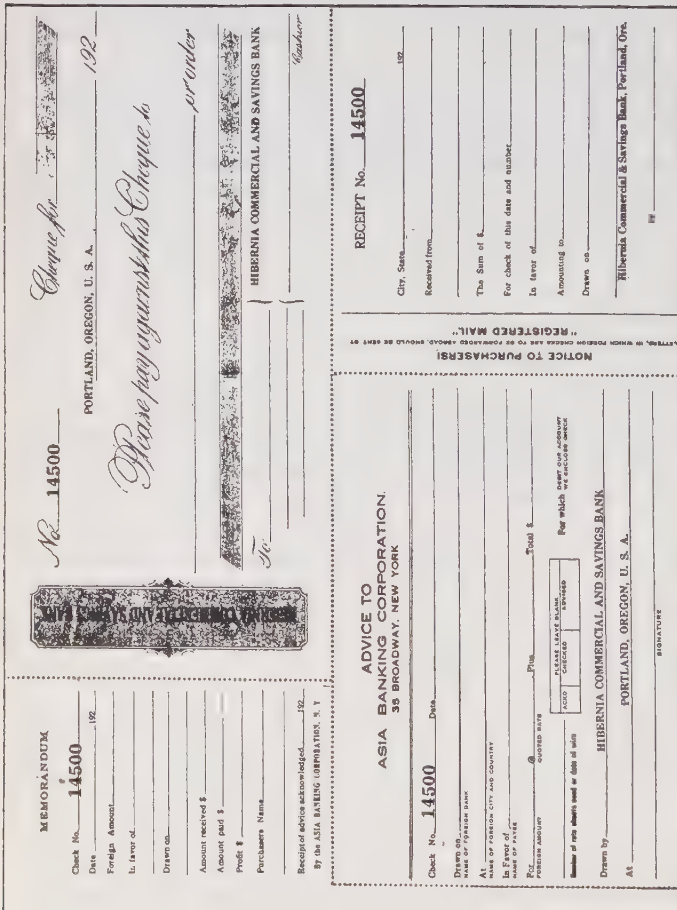
FOREIGN EXCHANGE—NO ACCOUNT ABROAD.—Foreign exchange is sold under one of two methods. In the first case the retailing bank maintains no account in foreign countries and takes no risk on the transaction. Under previous arrangement a firm quotation is obtained from some bank that maintains foreign accounts. The retailing bank sets its own price, obtaining a profit by the difference between the two rates. The retailing bank has been supplied with a set of blank draft forms (Form 9). These bear only its own name. The customer does not know that the selling bank is dealing through a wholesaling organization. These draft forms have an advice stub attached. On making the sale the retailing bank fills out this stub and mails it to the wholesaler. The wholesaling bank notifies its correspondent to honor the draft when presented.

The bank selling incurs no risk on rates or otherwise. It merely remits for each transaction at the rate which had been previously quoted. Small and medium-sized banks usually handle all of their foreign exchange in this manner. Even fairly large banks use this method when drawing on points at which they do not have direct banking connections.

ACCOUNT HELD ABROAD.—Under the second system the selling bank carries its own account in the foreign country. For example, the Northern National opens an account in London by depositing £10,000 with the London Joint City & Midland Bank, Ltd. Then when it sells sterling exchange it merely issues a draft on its own account in London.

The draft is usually issued in duplicate. This is an old custom, first made necessary by the frequent loss of overseas mail. The two copies are forwarded by separate mail. The first to arrive is paid, whether original or duplicate, and serves as a stop-payment order on the other copy. On issuing a draft a notice is mailed at once to the bank on which drawn. On receipt of this notice, in nearly all countries except England and sometimes there, the foreign bank charges the Northern National's account. The foreign bank does not pay interest on the amount for the time between the arrival of the advice and the presentation of the draft. With speculators holding drafts, this amount may be material.

It is necessary for the bank to replenish its London balance by buying exchange from other banks, or by buying in America items drawn in pounds sterling, such as British coupons, collections payable in London, or the like, and forwarding these items to England with instructions to credit the pro-


MEMORANDUM
Check No. 14500
Date 192
Foreign Amount
In favor of
Drawn on
Amount received $
Amount paid $
Profit $
Purchasers Name
Receipt of advice acknowledged 192
By the ASIA BANKING CORPORATION, N. Y.

No. 14500
Cheque for
PORTLAND, OREGON, U. S. A. 192
Please pay against this Cheque to or order
HIBERNIA COMMERCIAL AND SAVINGS BANK
To
Cashier

ADVICE TO
ASIA BANKING CORPORATION
35 BROADWAY, NEW YORK
Check No. 14500 Date
Drawn on (NAME OF FOREIGN BANK)
At (NAME OF FOREIGN CITY AND COUNTRY)
In Favor of (NAME OF PAYEE)
For (FOREIGN AMOUNT) @ (QUOTED RATE) Plus Total $
For which DEBIT OUR ACCOUNT WE ENCLOSE CHECK
PLEASE LEAVE BLANK: ACKD CHECKED ADVISED
HIBERNIA COMMERCIAL AND SAVINGS BANK
Drawn by
PORTLAND, OREGON, U. S. A.
At
SIGNATURE

NOTICE TO PURCHASERS!
LETTERS, IN WHICH FOREIGN CHECKS ARE TO BE FORWARDED ABROAD, SHOULD BE SENT BY "REGISTERED MAIL."

RECEIPT No. 14500
City, State 192
Received from
The Sum of $
For check of this date and number
In favor of
Amounting to
Drawn on
Hibernia Commercial & Savings Bank, Portland, Ore.

FORM 9. Foreign Exchange Draft Supplied to Interior Retailing Bank by Bank Carrying Foreign Account, together with Advice and Receipt Forms Used by Retailing Bank

ceeds to its account. The bank's profit from this department depends to a considerable extent on the rate of turnover. If the bank purchases each day the approximate amount sold, the danger of the bank losing on the market is largely eliminated.

If the Northern National Bank had but a single foreign account, it would show that account in dollars as a separate item on the general ledger. If it had a number of accounts abroad, it would maintain one general ledger control account, **Due from Foreign Banks,** and would have subsidiary ledger showing the amount due from each separate institution. These separate accounts would have double columns, one for entering in pounds sterling, francs, lire, or whatever the foreign unit may be and the other for entering in dollars. Every transaction would be entered both ways. Thus, when the original deposit was made the debit would show £10,000, and if the price had been $4.80, then $48,000 in American money. As sales are made the credit would be entered in pounds sterling for the actual amount of the draft, and in dollars for the actual selling price not taking profit or loss into account.

Exchange rates are constantly fluctuating. A bank may sell sterling at a dozen prices during an ordinary business day, varying its rate with the market.

ACCOUNTING FOR FOREIGN EXCHANGE EARNINGS.—As all new purchases and all sales are commonly entered in dollars at actual cost or selling price, foreign accounts become, like an old-style merchandise account, a mixture of a real asset and profits or losses. A practical method of accounting for the profits or losses is to take inventory at regular intervals. The inventory is taken **at the market.** In a sense this practice violates the accounting principle of not taking a profit until it has been earned. Any other procedure, however, presents practical difficulties. If the practice of taking a profit on items unsold is ever justified it may be in the case of foreign funds. Here the profit is actually in money and may be converted into American dollars at any time at the market. By market is meant selling price of cable transfers.

Interior Routine

DIVISION OF WORK AMONG CLERKS.—In banks employing half a dozen people or less, it is necessary to have the duties largely interchangeable. While it is desirable for each man handling cash to have his separate funds and balance separately, the practice is not at all common. It will be found more often that the tellers group their work, the bank balancing as a whole. If there are errors, it is necessary for everyone to check until located. As banks become larger the routine is split so that different sections may balance as units. Thus a receiving cage will keep a record of all deposits received and of all items, such as checks, which have been forwarded for payment to other departments in the bank. The difference between the total of the deposits received and the amount of checks and other items sent out of the cage, should equal the net amount of cash.

Whether paying and receiving should be done through the same cage, and whether a teller should be limited to handling certain letters of the alphabet or be permitted to handle any customers, are debatable questions.

UNIT SYSTEM.—With the unit system, only a certain division of the alphabet is handled by the same tellers. Two receiving tellers and one paying teller may handle all customers' items whose names begin with letters between A and C. Or one teller may be a unit himself, handling both paying and receiving. Bookkeeping follows the same division. One section of the alphabet is handled as though it made a little bank in itself. Customers must do business at their own window. The arguments in favor are; The

teller can remember the names, faces, and signatures of his depositors since they are relatively few; a customer wishing to make both deposit and withdrawal does not have to wait in two lines; signature files, stop-payment notices, and pertinent data on the accounts can be kept in the cage; and information can be obtained whether checks have been cashed or deposits made that have not yet had time to reach the ledger. One of the main arguments against the unit system is that tellers in some sections may be idle while in others customers are lined up waiting.

ROUTINE OF RECEIVING CAGE.—Mr. Brown makes a deposit of $500. Receiving teller checks off the item on the deposit slip, verifies the footing and makes an entry in Mr. Brown's passbook. Possibly in the deposit there was $200 in cash, three checks of $50, each on the Northern National itself, one $80 check on a local clearing house bank, and a $70 check on an out-of-town bank. The teller, as soon as there is a slack moment—or if he has an assistant, the assistant, while the teller is receiving other deposits—sorts each check received into one of the following groups:

On us	Transit
Clearing house	Collection

(These groups are only suggestive, some banks sorting into more divisions.)

A list is kept in the cage of all checks sorted under these headings. For this purpose a sheet known as a **teller's blotter** is used. This sheet is ruled with columns for the groups indicated. At intervals during the day checks received on deposit and the deposit tickets are collected from the cage. The "on us" checks and deposit tickets are further sorted by bookkeepers and are charged or credited to the customers' accounts. Clearing house checks are sorted by names of banks where payable and duplicate lists run ready for collection through the clearing house. Transit checks are items drawn on out-of-town banks. They are routed to the transit department from where they are forwarded for collection.

If the bookkeepers make an error it will not affect the teller, as he can balance his cash without obtaining any figures from outside departments.

BATCH SYSTEM.—The batch system is designed to relieve work in the cages. The receiving teller is only responsible for verifying the amount of actual cash received from a depositor. He does not pay any attention to checks deposited, except possibly to run through them quickly to see that all are indorsed. He takes, temporarily, the customer's footing on the deposit ticket without question and enters that amount in customer's passbook. The deposit tickets ordinarily contain a clause at the top stating that depositor consents to having any differences charged back against his account. The teller keeps the cash deposited but all checks and deposit tickets are thrown in a basket. At frequent intervals, possibly every 15 minutes, the contents of these baskets are collected by a clerk who has this special duty. There may be 15 or 20 deposits in such a batch.

PROOF DESK.—The batch goes to a proof desk, where the checks are sorted under the same heading as would have been done in the cage. The work is proved on a sheet known as a **batch sheet** (Form 10), which may either be a blank listing paper or a sheet with simple printed columns. In the first column is listed, with an adding machine, the amount of actual cash deposited. This figure may be obtained by either of two systems. First, receiving teller makes a ticket for each deposit showing amount of cash. This is clipped to the deposit ticket. Second, the proving clerk reads itemizations made by customer on deposit tickets.

The checks in each group, such as "on us" or "clearings," are run under their respective headings and a total of each obtained. These five or six totals are then combined into a grand total, which must balance with the total of deposits. If there is any error, the clerk has merely to check back the 15 or 20 deposits in a single batch. Often the mistake will be found to have been made by the depositor, possibly in his addition or in his failure to deposit a check that is listed. In such cases the total on the ticket is corrected and a notice immediately mailed.

At end of day the total amount of cash, excluding checks and other items deposited, that has been received by each teller, is computed by the proof

PAYING AND RECEIVING TELLER No. 1 BATCH No. 6

CASH	ON US	CLEARING HOUSE	CLEARING HOUSE	COLLECTIONS	TRANSIT	CREDITS
25.00	25.00	1.50				
7.00	10.00	6.90		26.25	1.75	28.25
20.00	3.00	3.50		515.95	2.50	32.00
20.00	40.10	5.00			6.25	20.00
2.75	6.50	46.00		542.20	600.56	20.00
25.00		5.00			8.40	77.40
5.00	84.60	2.50			40.00	5.00
400.00		50.00			35.00	40.10
15.00		39.00			40.00	400.00
75.00		22.00			35.00	15.00
23.00		6.25			35.20	133.50
50.00		2.50			31.25	50.00
20.00		6.00			45.70	554.95
35.00		2.50			40.75	23.00
50.00		10.00				54.50
25.00		150.00			922.36	50.00
5.00		10.00				30.00
		2.00				150.00
802.75		27.50				35.00
		40.00				600.56
		23.55				50.00
		27.00				45.40
		31.25				32.50
						424.70
		519.95				
						2,871.86
					802.75	
					84.60	
					519.95	
					542.20	
					922.36	
					2,871.86	

FORM 10. Batch Sheet

desk. To get this figure the desk either runs the cash tickets that the teller has prepared, or it totals all of the currency figures (the first column as previously explained) on a teller's batch sheet. When the cash ticket system is used, a batch may include deposits received by several tellers; under the latter method, but one teller's work is gathered to make a batch. The cash received, added to the currency on hand at start of day, less checks cashed, must equal the amount of money which the teller has on hand at close of day. All that a teller need do to find if he balances, is to count his cash at end of day.[3]

[3] In various parts of the country the batch system and the proof desk are known by varying names. "The block system" is a title commonly used. The "proof desk" may be known as the "check desk," or "interior clearing house" abbreviated to "interior," or as the "pivot desk."

All departments must balance to the figures of the proof desk. Thus, during the day the proof desk has sorted all checks drawn on clearing house banks under the heading, **clearings.** It obtains a grand total for the day. The checks themselves go to a clerk or clerks who sort them according to the clearing house bank on which drawn. The combined total to be collected from other banks as computed by the clearing house clerk must agree with the proof desk figures. All "on us" checks are sorted to bookkeepers, such as A to C bookkeeper, D to H bookkeeper, etc. Each makes a run of checks which he receives. At end of day these combined bookkeepers' figures must equal the total of "on us" checks obtained from batches by the proof desk.

Transit Department

SYSTEM USED IN CHECK COLLECTION.—Transit department receives from proof desk all checks to be collected from out-of-town banks. National banks and state banks belonging to the federal reserve system collect the majority of out-of-town checks through the federal reserve collection service. In such cases it is necessary to sort these items in accordance with number of days taken for their collection. The number of days is determined by mail distance of city where check is payable. The federal reserve banks issue zone maps showing for each center the number of days required on checks payable at other points. When the time shown by the zone map expires, credit is given the depositing bank without waiting for advice of actual payment or taking into account delays that may have arisen on the specific item.

Thus, if a bank in New York obtains a check drawn on a country bank in California, the check will be sent to the Federal Reserve Bank of New York and the general ledger account, **Federal Reserve—Collection account,** debited. On the 8th day the depositing member bank debits **Federal Reserve—Reserve account** and credits the collection account. On same day the Federal Reserve Bank of New York automatically credits member bank's reserve account.

The federal reserve banks do not themselves make any charge for this service. Arrangements can be made by a member bank to send items direct to the federal reserve bank or branch in the territory where payable. By direct sending a time saving is made over depositing the items in its own federal reserve bank and having that bank resend them. When a New York bank sends items direct to the Federal Reserve Bank of San Francisco, it notifies its own reserve bank (the Federal Reserve of New York) of the amount sent.

Illustration of collection system in use before the establishment of the federal reserve and still widely used is as follows: The Northern National of Seattle may have a correspondent in New York City. Items drawn on New York or nearby points will be forwarded to that correspondent bank. The items are listed on a special deposit form known as a **"cash letter."** The total of such letters for the day may be $10,000. The account with the New York bank is debited for this amount the day the cash letter is mailed, no consideration being given to time required for collection. On receipt of cash letter 5 days later, the New York bank will credit account maintained with it by Northern National.

Other items will be mailed for collection to banks which are not correspondents. In the latter case the debit is made to a general account called

transit, or **Due from Banks—Collection account.** When item is paid or returned transit account is credited. This account, therefore, always represents current items which have been forwarded for collection and, if no more items are added, it is wiped out in a few days. The total amount charged daily against federal reserve, correspondent banks, and transit must equal total of transit items as obtained for day by proof desk.

Loan Department

APPLICATION FOR LOANS.—Customers apply for a loan or a line of credit to one of the **loaning officers.** Ordinarily, unless collateral is offered and sometimes then, a customer is requested to fill out and sign a statement of his assets and liabilities. During the interview, the officer gains an idea of purpose for which money is to be used, and forms an impression of applicant's ability and character. The information gained in this first interview is supplemented from bank's own files, from mercantile agency reports, from consulting references, and where necessary from special investigation. After officer has fully made up his own mind, he makes a recommendation to **loaning committee.** This committee is composed of senior officers and must finally approve every important application. Small loans and those amply secured may be made direct by loaning officer.

The **procedure** in making a loan, of course, varies with the size of bank. In small institutions it is practically necessary for decision to be made by the one controlling officer. The tendency is wherever possible to have the judgment of several officers before finally committing the bank.

ORGANIZATION OF DEPARTMENT.—In large banks there is a credit department, divided into sections. An officer is in charge of each section. One officer may handle all loans from one type of industry, such as cotton manufacturing; or the division may be according to size of loan, geographical location of borrower, or merely arbitrary.

The practice is growing of having an auditor attached to the credit department. This auditor goes over applicant's books, making such investigation in the customer's office or elsewhere as may be necessary to verify his statement. A large bank may employ from one to several score of investigators who work outside interviewing references and obtaining trade information.

CREDIT FILES.—A folder is made for each borrower, in which is placed his statement, mercantile reports, letters from references, a memorandum dictated by loaning officer giving details of transaction, and bank's own opinion of customer's credit standing. Where lengthy investigation has been necessary, the folder is divided into sections. From regular borrowers new statements are customarily asked for each year.

In addition a card record may be kept for every customer of the bank, showing the department with which he does business, his average balance, and such additional brief information as is readily obtainable. This record is kept so that the credit department will have some information in case the customer should make application for a loan, or in case he gives the bank as a reference.

JUDGING A BORROWER.—The oft-quoted three "C's," Character, Capacity and Capital, are primary considerations in judging a borrower. In addition, the bank considers market conditions in the particular industry, the amount of available funds that the bank has, and the balance that the borrower maintains. It is customary to require the borrower to have a

minimum balance of 20% of his loans. When a bank's loanable funds are limited it tends to favor those who maintain a profitable account.

Safekeeping

GROWTH OF SAFEKEEPING BUSINESS.—When the Liberty bond subscription drives were on many banks promised to keep customers' bonds without charge. This privilege was widely taken advantage of, both for Liberty bonds and other securities. In such cases non-negotiable receipts were issued in duplicate to customers. Even in moderate-sized banks the amounts left for safekeeping often run into hundreds of thousands, or even millions of dollars. Some banks now charge for this service.

HANDLING SAFEKEEPING SECURITIES.—The usual method is to put each customer's securities in an unsealed envelope which is filed alphabetically or numerically. A few banks take up Liberty bonds at par in a special account in the general ledger and show on the opposite side a liability to customers for safekeeping. Under this latter theory such bonds are treated the same as **money deposited.** They become part of the bank assets, may be used as collateral, and in case of bank's failure, the receipt holder becomes merely a general creditor. Under the more common method the bank is a **bailee.** In case of bank failure the customer is entitled to receive back his securities intact; in case of holdup or robbery the bank is liable only if it does not exercise reasonable precaution.

Safekeeping receipts are numbered and a bound carbon copy kept or a register maintained. As securities are redelivered and receipt canceled, a notation is made on the register or on the bound copy. The bank must have either the customer's receipt showing redelivery or the original securities.

CLIPPING COUPONS FROM SAFEKEEPING SECURITIES.—Some customers leave instructions for clipping coupons as they become due, to be credited either to checking or savings accounts. With such instructions it is necessary for the bank to maintain a tickler with a notation filed under the dates on which coupons are due. The bank is given authority as agent to sign income tax ownership certificates. In many banks the total of Liberty bonds held for safekeeping is so large that a special system has been devised for handling these issues. Under such a system Liberty bonds, on which the coupons are to be clipped, are kept in bulk. For each issue there is a file of cards. Thus, under the Fourth Loan would be a card for John Jones showing that he had left $200 of that issue with the bank, the interest to be credited to his savings account number 8,201. A memorandum control account is kept by issues which must balance with the actual bonds on hand and with the total of safekeeping ledger cards. As additional bonds of this issue are left, the control account is debited and, as deliveries are made, credited.

On interest dates credits to customers' accounts are made up from the cards and coupons clipped as a whole. This bulk system has the advantage of saving time and of enabling check to be made of the total interest credited. The bank's relationship with customer is still that of bailment.

Auditing Department

PURPOSE OF THE AUDITING DEPARTMENT.—An auditing department should work directly under the board of directors, keeping itself aloof

from administrative officers and refraining from making original accounting entries. Thus it is able to criticize where criticism is due.

This ideal is reached in but few banks in this country. More often an auditing department works under the administrative officers and to some extent makes original entries. In small institutions this arrangement is probably necessary.

The auditing department should keep such close control on all branches of the bank's work that no dishonesty or errors of importance can go long undiscovered. In addition it should have the constructive duty of improving the bank's methods with the idea of accuracy, safety, and labor-saving. Among its duties should be the investigation of all differences reported by customers and the preparation of the many reports required by state and national authorities.

To some extent internal auditing parallels the work of the national or state examiners. It works, however, from a somewhat different angle. There should be sufficient help to permit closer supervision than is possible under any outside auditing methods. Examiners are interested in solvency, either immediate or ultimate, of the bank. The internal auditing department ascertains that all income to which the bank is entitled is received; that the chance for dishonesty is minimized; and that efficient methods are used.

AUDIT OF BANK ASSETS.—The auditing department should have joint control of the vault, no securities or other assets to be removed without its knowledge and record. Where this is not practical the assets should be verified from time to time by actual count, preferably at surprise dates. As a count is always made by examiners, the auditing department may to some extent rely on their work. As to assets such as cash in teller's hands, bonds that are actively traded in and the like, it is not the safest policy to leave them unchecked over long intervals between examiners' visits. The auditing department should make its own verifications at frequent intervals.

NOTE DEPARTMENT.—An occasional check must be made to see that all notes and collateral are on hand. Examiners do not attempt to check interest and discount calculations. As a bank's principal income lies here and an error or defalcation once passed would never be discovered except by accident, well-organized departments keep careful control to see that all interest is properly computed and credited on the bank's books. A representative of the auditing department may be kept in the note cage to check all such transactions as they occur. The auditing department may work from the notes themselves or liability record the following day, or may keep a copy of all notes, post all payments to these records, and verify interest computations. The latter method, while involving more work, is in most cases the most effective.

COMMERCIAL DEPARTMENT.—Here the auditing department runs ledgers from time to time, checking with the control. It commonly supervises the making of statements or writing up of passbooks and deals with the customer in making all corrections. A few auditing departments go so far as to mail annually a notice to all depositors, requesting them to verify the balance. This latter practice, while a wise precaution, is not generally followed, due to the work involved and fear of troubling depositors. A detailed check may be made occasionally at surprise dates. At such times a day's work is taken, the signatures on all checks charged against an account are verified, credits are compared with deposit tickets, and the like. Due to volume of work, this is only practical as an occasional surprise measure.

COLLECTION DEPARTMENT.—Here the auditing department receives all tracers sent in by other banks inquiring why advice has not been received. It is felt no extensive defalcation or error is likely to occur without the customer writing and requesting information.

EXCHANGE DEPARTMENT.—In a large department, a method of auditing is to have a representative of the auditing department check each transaction as it occurs. The objection is that a man stationed permanently in a department becomes careless as he gets to know the men he is working with. Owing to fluctuating exchange rates, it is difficult to keep an accurate check, however, by other means. Where a man cannot be kept in the foreign department the auditing department reconciles foreign bank accounts and compares sales and purchases with the general trend of the market.

SAFEKEEPING DEPARTMENT.—The auditing department in many banks is furnished a triplicate entry of the customer's receipt and uses this copy for checking against the actual security. Otherwise it works from the duplicate receipt kept by the bank and from the register, keeping track of serial numbers. This department calls for care as the amounts do not, except with a few institutions, enter into the bank's general books.

BOND INCOME.—The auditing department compares the income recorded on the books from bonds with the amount which should have been received, considering the par value and the coupon rate.

EXPENSE RECORDS.—These are usually carefully supervised by the auditing department. The classifying of expenses should be passed on by at least one man in addition to the one making the original analysis. Unless the classifying is carefully watched, the same type of items will at one time go under one head and at a later date be put under another, thus injuring the comparative value of the records. Payments should be proved to see that goods were actually ordered, that they were all received, that the price is correct, that previous payment has not been made, and that the payment bears proper authorization.

SYSTEM OF INTERNAL CHECK.—Where possible the system is arranged so that every transaction passes through at least two hands. A teller receives a deposit, but a bookkeeper, entirely separated, posts the amount to the account. If the customer notes a difference, he notifies the auditing department direct. One teller receives payment on notes; another department delivers the collateral. One bookkeeper posts the ledger; another, working independently, posts the statement. One department makes entries in the cashier's check register; the checks themselves, as they are paid, are stamped off by the auditing department. Were a teller to start issuing checks and not show the liability on the register, he would be discovered as soon as the checks came in for payment.

The auditing department is responsible for making this system of internal check as tight as practicable. It must take into account the personnel, labor cost, type of customers, and banking education of the bank's force, and of the general public.

SECTION 18

CREDITS AND COLLECTIONS

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(For list of forms, see complete table of contents.)

SECTION 18

CREDITS AND COLLECTIONS

RELATION OF THE ACCOUNTANT TO THE CREDIT MAN.—The accountant and the credit man have much in common. The accountant's interests depend upon the business man's need and appreciation of accurate and informative records and financial reports. The credit man considers it of prime importance that the credit applicant have such information and use it as a chart in planning his operations. In his desire to do constructive work —assisting to increase business by extending all the credit in a given case which prudence and sound practice permit—the credit man co-operates with the customer, and to do so intelligently he requires the light which the financial statement throws upon the affairs.

The **amount of assets** is not necessarily of controlling importance. The honesty, ability, and business prospects of the debtor are weighty factors. The figures must be correct, complete, and faithful representations of the facts. The statement should be in accordance with the books, but particularly with the actual conditions. All qualifying comments required should be plainly and fully stated. The value of the statement is lessened if it does not command confidence. That accountant best serves his client who earns a reputation which inspires confidence in the reports he signs.

Forms of Credit

OPEN ACCOUNT OR BOOK CREDIT.—There are various forms of credit. One is the open account or book credit, which applies to a transaction when goods are sold and delivered on credit and charged or debited on the books of the seller to the customer—this book entry being the only written evidence of the debt. In such transactions, should the one charged deny the debt, it would be incumbent upon the seller to prove the amount claimed was sold and delivered.

ASSIGNMENT OF ACCOUNTS RECEIVABLE.—Open accounts are negotiable. They may be sold or assigned as collateral for a loan. The practice of borrowing by giving open book accounts as collateral has assumed large proportions. There are **two general plans** under which such transactions are usually effected:

1. **Notification.**—Under this plan lender gives written notice to payee of the account that it has been assigned and is payable to lender. Such notices are sent to all whose accounts have been transferred to the assignee and in subsequent transactions the notice is stamped upon the bills.

2. **Non-notification.**—Under this plan debtors of the assignor are not notified. The borrower continues to collect as usual and transfers the receipts to lender in accordance with their agreement.

The banker usually lends up to from 70% to 85% of the amounts of the assigned bills, leaving himself a margin of safety against losses, returns and allowances, dependent upon his judgment as to quality of the accounts. The borrower is charged, in effect, 6% for the use of the money and a commission which varies from ½% to 2%—and in some cases more—of the amount of the invoice, this being gauged by the type of lender, status of the borrower, terms of sale, and risk involved.

Finance companies and bankers who lend upon assigned accounts urge that this system of financing benefits: (1) manufacturers, a large part of whose investment is locked up in fixed assets; (2) capable merchants, generally, whose growth is retarded because of a lack of adequate working capital.

Moreover, they argue that the financing charges are more than offset by advantages resulting from: (a) the doing of a larger volume of business; (b) the ability to take advantage of discounts on purchases and to make advantageous cash purchases.

Credit men are opposed to this method of financing principally because of its secrecy. Besides, they believe that the charges may impose serious handicaps, that the practice may lead to unwise expansion, and that it may lend itself to perpetration of frauds.

Credit departments frequently find it desirable to make investigations between financial statement dates, accepting as a fair barometer the account's payment record. The concern that has become an unsound risk may be enabled to make prompt payments by secretly resorting to this mode of financing, and thus to conceal from the unsuspecting credit man the true condition. The credit man does not want to be prejudiced, but considers that he is entitled to knowledge of such practice so that he can decide in each case whether, in spite of the transfer of these valuable assets, the account is entitled to credit and, if so, how much. Concealment he deems a menace.

The National Association of Credit Men strongly advocates, and has been doing so for years, that the assignment of accounts be given **publicity** and that laws be enacted requiring that notice of all such transactions be filed with a designated public official so that credit men may protect themselves by investigating such records, as they do in respect to chattel mortgages.

PROMISSORY NOTES.—A promissory note is a written promise to pay unconditionally a definite sum of money on demand or at some specified time in the future. If such note is made payable to a particular person, it is non-negotiable; if made payable to a particular person's order or to bearer, it is negotiable and title may readily be transferred by indorsement and delivery, and the note may pass through many hands before it is finally paid.

BONDS.—A bond is a written promise, under seal, to pay a certain sum of money at a fixed time in the future. It is usually one of a series of like tenor and amount, all carrying interest at a fixed rate and usually under a common security. The security for a bond as well as the terms and conditions under which it is issued may be found in the bond itself.

A bond is readily transferable by indorsement and delivery. It may be accepted by bankers and lenders as collateral for loans. The period which a bond runs is usually much longer than that of an ordinary promissory note; and bonds are usually issued to obtain capital for the purchase of equipment and other fixed assets.

SHARES OF STOCK.—A certificate of stock is evidence of ownership in a corporation, the stockholders being the owners of the company's net assets. There are two classes of stock—common and preferred.

A company may issue only one class of stock which would be known as "common." If it issues 10,000 shares of such stock, par value $100, Stockholder A, holding 1,000 shares, possesses an equity equivalent to 1/10th of the corporate assets. Should the directors decide to distribute part of the profits to the stockholders, say $60,000, they would declare a dividend of 6% and A would receive $6,000, being 6% of the par value of his stock, or 1/10th of the total amount distributed. Were the corporation to dissolve, and the net profits of the sale of its assets amounted to $1,000,000, Stockholder A would receive 1/10th thereof, or $100,000.

In addition to this common stock, a company may issue **preferred stock.** Preferred stock possesses characteristics which differentiate it from the common stock, such as preferences as to dividends or as to assets in case of dissolution, or a distinction with regard to voting power. Preferred stock may not necessarily be superior to the common stock, it being merely designated "preferred" to distinguish it from the common stock.

One who contemplates making a purchase of stock should read carefully the stock certificate to ascertain terms and conditions to which the issue is subject.

CHECKS.—A check is a written order by a depositor upon a bank, to pay a certain sum of money at sight to order of a payee named in the instrument. A check drawn to bearer is payable to any person who holds it. A check payable to order or to bearer is a negotiable instrument and the payee, upon indorsing it, may transfer it to someone else for cash or to effect the payment of an obligation.

BILLS OF EXCHANGE.—A bill of exchange is a written order drawn by one person, addressed to a second person, requesting him to make payment of a definite sum of money at sight or at some definite time in the future, to a third person. The first and third persons may be, and frequently are, the same.

Bills of exchange used in domestic transactions are known as **drafts.** Such instruments usually arise out of a sale of goods, the seller ordering the purchaser to pay either himself or someone else who will act as his collector.

Sight Drafts—Bills of Lading Attached.—When sellers are unwilling to extend credit to buyers, cash transactions may be arranged whereby, upon delivery of title to goods to the buyers, they will honor sight drafts drawn upon them by the sellers. For example, the Jones Manufacturing Co. of New York City may arrange such a transaction with the National Jobbing Co. of Chicago. The Jones Manufacturing Co., upon delivery of the goods to the carrier, receives a bill of lading which is acknowledgment of the receipt of goods and a contract for their delivery in Chicago. The bill of lading is attached to the sight draft together with the invoice for the goods, and the papers are forwarded through the New York bank of the Jones Manufacturing Co. to its correspondent in Chicago. The latter bank presents the draft to the National Jobbing Co. and upon receipt of payment, transfers to it the bill of lading entitling the company to the goods.

Time Drafts.—If, instead of insisting upon a cash transaction, the Jones Manufacturing Co., in the foregoing illustration, had been willing to extend—say 60 days' credit, it would have in like manner deposited the documents with its New York bank for forwarding to the bank's Chicago correspondent,

and the Chicago bank then would present the draft to the National Jobbing Co. for acceptance, whereupon the bank would transfer the bill of lading to the National Jobbing Co.

The draft is accepted by writing across its face the word "accepted," the date, the name of the bank where payment is to be made, and the company's signature.

Bank Acceptances.—When the bill of exchange is drawn on a bank or accepted by it, such draft becomes a bank acceptance. In such transactions the bank gives the purchaser permission to use its credit. Instead of the purchaser accepting a draft or trade acceptance drawn upon him, he enters into an agreement with the bank to have the instrument drawn on and accepted by it. The Federal Reserve Board has defined a bank acceptance as "a draft or bill of exchange . . . . of which the acceptor is the bank, or a trust company, or a firm, person, company or corporation engaged generally in the business of granting banker's acceptance credits." Bank acceptances are used largely in financing international trade and domestic transactions in connection with major staple commodities.

WAREHOUSE RECEIPTS.—Receipts for commodities stored in a warehouse. Warehouse receipts are transferable by indorsement. They may be used as collateral in obtaining bank loans.

TRADE ACCEPTANCES.—A trade acceptance (Form 1) is a time draft drawn by seller on the buyer for purchase price of goods and accepted by the buyer, payable on a certain date at a certain place designated on its face. The trade acceptance should be used only in current transactions involving purchases and sales of goods. They should not be given for borrowed money or for past-due accounts.

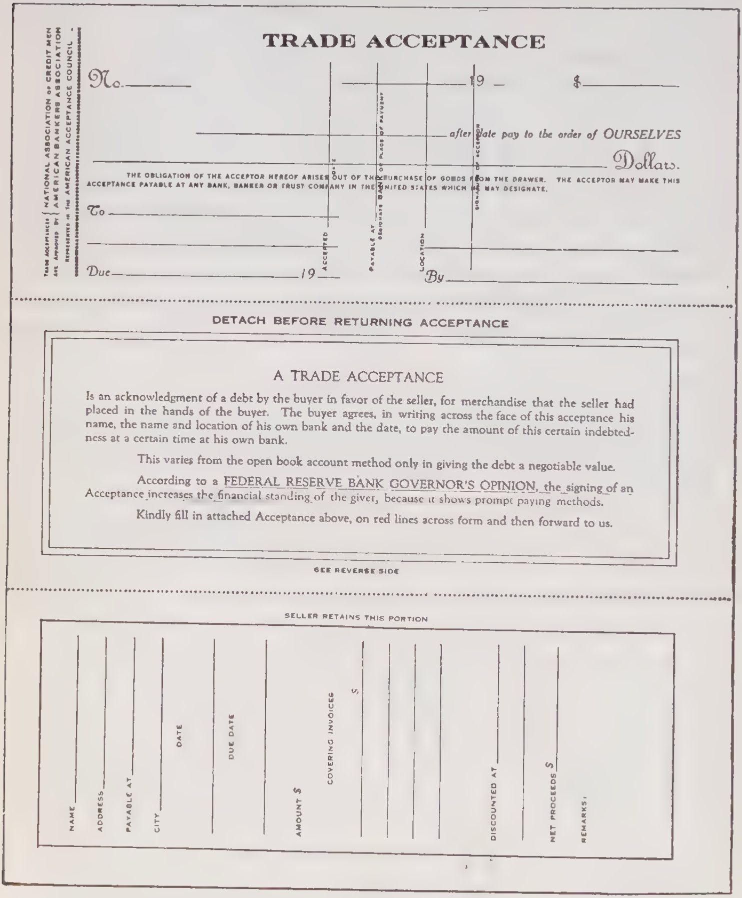
How to Use Trade Acceptance.—The trade acceptance may accompany the invoice, may be mailed afterwards, or, in cases of active accounts, may accompany the monthly statement and cover the total amount of invoices rendered during the month. The buyer who receives the trade acceptance may either decide to discount the bill and ignore the trade acceptance, or if he desires to make payment at maturity, he may "accept" the trade acceptance by writing across the face the date and the words "Accepted, Payable at . . . . Bank," and then signing it and returning it to the seller.

Upon receiving properly "accepted" trade acceptances, the seller may use them for borrowing purposes either by presenting them to his own bank for discount or by selling them in the open commercial paper market. Otherwise he will hold such acceptances and in due time before maturity, depending upon the location, he will forward them for collection through his bank to the banks designated in the acceptances. According to law, the place of payment of a trade acceptance is at the office of the acceptor, unless a definite place be designated on its face, such as the acceptor's bank—this being the usual method.

Eligibility.—To be eligible for purchase by or discount at a federal reserve bank, a trade acceptance should bear *prima facie* evidence that it is drawn by the seller on the purchaser of goods sold and must have a maturity, at time of purchase or discount, of not more than 90 days, exclusive of days of grace, excepting that if drawn for agricultural purposes or against sale of live stock, it may have a maturity at time of discount of not more than 6 months, exclusive of days of grace.

Advantages to Seller.—The advantages of the trade acceptance to the seller are the following:

1. It establishes the **correctness** of the amount.
2. It tends to eliminate common **abuses** such as unwarranted returns of merchandise, deductions of excessive discount, and unjust claims.



Trade Acceptances are Approved by { National Association of Credit Men / American Bankers Association
Represented in the American Acceptance Council

TRADE ACCEPTANCE

No. ____ ____ 19 __ $ ____

____ after date pay to the order of OURSELVES

____ Dollars.

THE OBLIGATION OF THE ACCEPTOR HEREOF ARISES OUT OF THE PURCHASE OF GOODS FROM THE DRAWER. THE ACCEPTOR MAY MAKE THIS ACCEPTANCE PAYABLE AT ANY BANK, BANKER OR TRUST COMPANY IN THE UNITED STATES WHICH HE MAY DESIGNATE.

To ____

Due ____ 19 __

ACCEPTED ____ DATE

PAYABLE AT DESIGNATE BANK OR PLACE OF PAYMENT

LOCATION

SIGNATURE OF ACCEPTOR

By ____

DETACH BEFORE RETURNING ACCEPTANCE

A TRADE ACCEPTANCE

Is an acknowledgment of a debt by the buyer in favor of the seller, for merchandise that the seller had placed in the hands of the buyer. The buyer agrees, in writing across the face of this acceptance his name, the name and location of his own bank and the date, to pay the amount of this certain indebtedness at a certain time at his own bank.

This varies from the open book account method only in giving the debt a negotiable value.

According to a FEDERAL RESERVE BANK GOVERNOR'S OPINION, the signing of an Acceptance increases the financial standing of the giver, because it shows prompt paying methods.

Kindly fill in attached Acceptance above, on red lines across form and then forward to us.

SEE REVERSE SIDE

SELLER RETAINS THIS PORTION

NAME ADDRESS PAYABLE AT CITY DATE DUE DATE AMOUNT $ COVERING INVOICES $ DISCOUNTED AT NET PROCEEDS $ REMARKS:

Form 1. Trade Acceptance

3. It facilitates and improves **collections.** Debtors who by habit attach much more importance to written instruments bearing their signatures, are more likely to be prepared to honor trade acceptances which they know will be presented on specific dates and may be negotiated, passing out of the sellers' hands.
4. It reduces **bad debts.** The use of trade acceptances is conducive

to close collections and tends to cause the buyer, impressed by the definite payment date, to be more conservative and to more carefully and soundly regulate his business.

5. It is an aid to **financing**; receipts may be much more easily estimated, also one can frequently borrow to much better advantage on the trade acceptance than on his own note.

Advantages to Buyer.—Trade acceptances enable the seller to do business more economically and to enhance his borrowing power; they give banks sound, self-liquidating commercial paper bearing two names and strengthen the banking position. Better economy in the seller's business and a stronger banking system contribute materially to the strength and stability of the entire community and the retailer shares in resulting benefits.

LETTERS OF CREDIT.—Commercial letters of credit are used to finance transactions in foreign trade. They authorize the exporter to draw upon a branch or correspondent of the issuing bank up to the amount named in the letters, in accordance with terms and conditions stated. In case of **dollar credits** it is customary for the bank to make its credits available by drafts drawn on itself. Importer may take time purchases, but by causing letters of credit to be issued to exporters, they enable exporters to obtain cash at time of shipment by discounting the drafts drawn under the letters of credit, the importers not being called upon to pay until maturity of the drafts.

Smith & Co., New York jobbers, place an order for silk goods with Taro & Co., Yokohama, agreeing to arrange with a New York bank to open a confirmed letter of credit in favor of Taro & Co. for $10,000, the amount of the purchase, drafts to be drawn at 90 days' sight. Smith & Co. either negotiate a loan at the bank covering the amount involved or deposits adequate collateral; or, in view of Smith & Co.'s standing, the bank may open the credit without requiring the deposit of any security, confident that the firm will meet the call for payments when due. The bank then asks Smith & Co. to sign an application and also an agreement (both sometimes being contained in one instrument), the agreement covering, among other things, terms of sale, documents to be delivered, and duties and responsibility assumed by both Smith & Co. and the bank.

The bank, deeming itself secured and having the application and agreement duly signed by Smith & Co., opens the confirmed letter of credit. It gives Smith & Co. the letter of credit, sometimes in duplicate, the original to be mailed to Taro & Co. In urgent cases, the bank cables its correspondent and confirms it by mail. Taro & Co., upon receiving the letter of credit or word from the bank that one has been opened in its favor, delivers the merchandise to the carrier for shipment, securing the necessary documents. Taro & Co. then draws a 90-day sight draft under the letter of credit, addressed to the New York issuing bank, and presents both the draft and the documents to the Yokohama correspondent, requesting that the draft be discounted. If the draft and the documents are in order and meet the requirements, the Yokohama bank pays Taro & Co. the amount of the draft less the discount. The Yokohama bank then forwards the draft together with the documents to the New York bank. The New York bank, finding the draft and documents in order, accepts the draft, usually by stamping across its face the word "accepted" and the date, with the signature of a duly authorized officer of the accepting bank. The bank indorses and delivers the documents to Smith & Co., who sign a trust receipt giving the bank a lien upon the goods.

At maturity, the issuing bank collects from Smith & Co. either by receiving a check or charging the account, and makes payment to the correspondent bank. Of course, in the case of **dollar credits,** the bank pays itself.

Although Taro & Co. received cash at time of shipment, Smith & Co. had the goods released to it without being obliged to pay until maturity of the draft, this transaction being made possible by the New York bank's permission under the letter of credit, to Smith & Co., to use its credit, for which Smith & Co. pays the bank a commission.

Classes of Credit

BANKING CREDIT.—The commercial bank has **two primary functions:** first, to receive deposits, and, second, to make loans and to discount business paper. To accomplish this dual purpose, the bank must set up a very high credit standard for persons who apply for loans or discounts. The borrower must be able to measure up to these high standards; he must be able to give the very best kind of security, either a financial statement showing his business to be in sound condition backed up by his reputation for character and business ability, or he must give adequate acceptable collateral, usually in the form of negotiable instruments.

Since the bank's obligations are in excess of available cash on hand, it is essential that loans and discounts shall be of such nature that a sufficient amount of them can be quickly converted into cash. The facility offered by federal reserve banks to their member banks of rediscounting eligible commercial paper is a potent aid in liquifying loans and discounts.

INVESTMENT CREDIT.—Investment credit is the confidence commanded by incorporated companies by virtue of their integrity, financial soundness, stability, and earning capacity, which induces investors to purchase their bonds, mortgages, or shares of stock. The purchaser gives the corporation the use of his funds in the belief that his principal is secure and will render him a satisfactory return.

RETAIL OR PERSONAL CREDIT.—Retail or personal credit is the power of the individual to obtain things of value for personal use or consumption upon his promise to pay money therefor at an agreed upon time in the future. This credit enables the individual to have a purchasing power in excess of his available cash and also serves him as a convenience by facilitating shopping.

MERCANTILE CREDIT.—Mercantile credit is the power of one merchant to obtain goods or services from another for business purposes upon the promise to pay at a specified time in the future. The transaction rests upon the willingness of the seller to accept the promise, or, in other words, upon the confidence in the buyer's willingness and ability to pay.

Retail Credit Granting

DEFINITION.—**Retail credit** is the power of the individual or consumer to obtain goods or services by giving a promise to pay the agreed upon price in money at a specified time in the future.

ADVANTAGES.—By adopting a credit policy or by authorizing customers to have their purchases charged, the retailer serves their convenience and at the same time establishes a contact with them which tends to build business.

CREDIT RISK.—The decision as to the acceptance of such promise and the measure of credit to extend, relying thereon, is based on the credit's man judgment as to the willingness and ability of the purchaser to pay. Among the essential factors considered in determining the quality of the risk are the reputation of the applicant for integrity and trustworthiness, his financial condition, his earning power, and the nature of his vocation.

POINTS OF INFORMATION.—Specific points covered by an investigation are:

1. Full name—signature
2. Residence
3. Age
4. Business
5. Business address
6. Nature of employment
7. Approximate income
8. Mercantile agency rating
9. Financial condition
10. Bank
11. References
12. Experiences of others
13. Comments as a result of personal interview

SOURCES OF INFORMATION.

Mercantile Agencies.—The retail credit department has available the services of the mercantile agencies—R. G. Dun & Company and Bradstreet's—when investigating persons who are engaged in business. These reports give the business record and reputation, as well as the financial condition, and the experiences and opinions of merchants to whom the subject of the inquiry is known.

Banks.—The bank may be consulted as to its experience and opinion Its information may be given in vague terms and have only negative value, but at times data is received which is helpful.

References.—Retail credit departments usually ask the credit applicant for business and personal references from whom information is sought respecting his character, financial standing, manner of meeting obligations, and prospects.

Credit Information Bureaus.—Probably the most important service available to the retail credit department is that rendered by the credit bureau. Such bureaus are organized on a non-profit-making basis by retail credit men. They foster free and frank interchange of credit experiences and opinions through an agency motivated by the highest standards and organized along economical and efficient lines.

The Reference Clearance Bureau, conducted by the Associated Retail Credit Men of New York City, Inc., has proven an efficient medium for securing valuable information for members. The nature and scope of its operations and the methods and systems employed are most worthy of note and are clearly set forth in the following article, reprinted by permission of *Women's Wear* and the Associated Retail Credit Men of New York City, Inc.

The Reference Clearance Bureau

Organizing and establishing a reference clearance bureau for the purpose of centralizing the clearing of references and the collection of information concerning individuals seeking to open charge accounts in retail stores has become national in scope. Because of its aid to the retail credit man and its value to the retail merchant, in practically every city of any size in the United States a merchant-owned or merchant-controlled reference clearance bureau is in operation. Previous to the establishment of reference clearance bureaus for the collection and collation of information and the ledger experience of stores with respect to individuals who enjoy the privilege of a charge account, the retail credit man was often put to much trouble seeking information about other charge accounts which prospective customers might have but which they did not mention to him when opening the account.

Form 7

REFERENCE CLEARANCE BUREAU
OF THE
ASSOCIATED RETAIL CREDIT MEN OF NEW YORK CITY, INC.
15 WEST 37TH STREET

TO MEMBER NO. ....

The information given hereon is in answer to an inquiry and is communicated to and accepted alone, subject to the following conditions, covenants and agreements: That all information furnished hereon by this Bureau shall be held in strict confidence and shall not at any time be revealed to the subject of the inquiry or to any one else; that the information asked is not for the use of others, nor will permission be given at any time for making of an inquiry for such purpose; that this inquiry was made for the clearance of a person solely for the aid and guidance of the business of the inquirer or for determining whether or not credit should be given; that the facts upon which this clearance is based were obtained by the Reference Clearance Bureau from sources deemed by it reliable, the accuracy of which information is, however, in no way guaranteed; that the inquirer by the acceptance of the information contained hereon, hereby agrees to become personally responsible and liable for any and all damage or damages arising as a result of a violation of any of these conditions, covenants and agreement under which this information is given; and further that the inquirer hereby undertakes to save the said Reference Clearance Bureau free and harmless from any loss or losses which may accrue to it as a result of such violation.

Name ______________________ Position ______________________

Business ______________________

Residence ______________________ Firm Name ______________________

Address ______________________

Summer Address ______________________

Date	For No.	From No.	Selling How Long	Highest Credit	Owing Now	For Months	30 60	60 90	90 120	120 Over	As Agreed	Un-Sat.	Closed Slow Pay.	Atty Coll.	Act.	Inact.	When Last Sold	Remarks

FORM 2. Member Report on Individual to Reference Clearance Bureau

As a general rule an applicant for a charge account always gives as references the stores where her account is in good standing. Unless there is a reference clearance bureau to which the retail credit man can apply, he has no means of knowing where the prospective customer had charge accounts other than those stores whose names she has given him. Oftentimes many stores have had a certain account, but have been obliged to close it because of slow pay or unsatisfactory dealings, either collecting it through an attorney or charging it off to Profit and Loss, and in many instances, if this information could have been obtained, the retail merchant to whom application for credit was made would have been saved hundreds, or even thousands, of dollars.

In order to bring about the disclosure of such information for the protection of the retail merchant, the establishment of a central bureau for the collection and dissemination of such data becomes necessary, and it was for this reason that the Associated Retail Credit Men of New York City, Inc., established their Reference Clearance Bureau.

In the office of this bureau, which is an organization merchant-owned, merchant-controlled, and merchant-operated, are thousands of cards bearing the names of people who have asked for credit or who have received credit from local and out-of-town stores. The expenses of the bureau are paid by the members according to their contracts, which vary in proportion to the number of clearances for which the member wishes to subscribe.

The feature of the reference bureau is that it depends for its existence and its efficiency upon the closest possible co-operation of its merchant members. The slightest carelessness or laxity on the part of any one of the stores composing the organization lessens by so much the efficiency of the bureau. When we consider what the credit departments of the various stores are called upon to do, we realize immediately the splendid spirit of mutual helpfulness which must be the basis of the organization.

Member stores are not merely requested to give their opinion on whether a certain individual is a safe account or not. Such reports may be easily rubber-stamped and are of corresponding value. Instead, the members are sent a report form (Form 2), whereon they are asked to give their ledger experience with the person who asks for credit. They are requested to give the length of time the applicant has been buying from them; his highest credit; how much he owes; for what period; what his paying habits are; and whether he is a satisfactory or unsatisfactory account.

Member stores are also asked to report immediately (Form 3) when they close an account, when they turn it over for collection to an attorney, or any other derogatory information. Upon receipt of such information and if the name of the party reported is already on file, all members whose code number appears on the master card are immediately notified and are given the information reported by the store which has closed the account for their future guidance in dealing with the individual in question.

Members are also asked to report daily (Form 4) all inquiries for credit information which they give to non-members and to report also whenever they open an account which they do not clear through the bureau.

In the case of change of address or of a new account a daily report (Form 5) is requested of the members. This information is not cleared through the bureau but is merely sent to the bureau for filing.

In this way the bureau is continually increasing its store of information which becomes available for every one of its members. In its files may be found the names and credit records of all the individuals whose names were reported on the association bulletins before the bureau's organization. In addition to this original list, information may be found on all those who have applied for credit with members and with a large number of non-members.

We might cite here a complete transaction. For instance, Mrs. John Doe of 401 Park Avenue may apply for a charge account at a store. She furnishes to the credit man the names of two stores where she has an account, a bank, and possibly other personal information. The credit manager will send to the bureau this information, and the subject of the inquiry will be checked through the files, the stores referred to cleared, and any additional information that may be collected on this account sent to the inquiring member. This subsequent information may show that the applicant for the charge account has accounts in several other stores where she is still owing amounts that may be long past due, accounts on which unsatisfactory experiences may have been had; or it may disclose that a suit or a judgment has been taken, or that there may be domestic troubles, in which her husband may notify the store that he will not be responsible for any charges incurred by his wife.

This class of information will immediately put the credit man on his guard. He may send for the prospective customer, or notify her that the application has been declined.

REFERENCE CLEARANCE BUREAU
Of The
Associated Retail Credit Men of N. Y. City, Inc.
15 West 37th Street

CONFIDENTIAL INFORMATION
SEND TO THE BUREAU IMMEDIATELY

Name
(Surname first)

Residence

Former Residence

Occupation

Business Address

OWING NOW	FOR MONTHS OF

Account Closed (Indicate by Check Mark)

ATTY.	SLOW PAY	DISPUTED	CK. NG.	UNS'FTY DEALING	P. & L. A/C	DOMESTIC TROUBLES

Remarks

Date Member No.

Form 3. Form for Report to the Reference Clearance Bureau When an Account is Closed

REFERENCE CLEARANCE BUREAU
of the
Associated Retail Credit Men of N. Y. City, Inc.
15 WEST 37th STREET

We Answered Reference Inquiry from ____________________

On ____________________
(SURNAME)

Residence ____________________

Business Address ____________________

Our Ledger Experience is as follows:

Selling how long	Highest Credit	Owing now	For months of

Payments are made (Indicate by check mark)

30-60	60-90	90-120	120 & over	As agreed	Uns'fty	Atty's Col'n	P & L

Account Active	Account Inactive	When last sold

REMARKS: ____________________

____

____

Date ____________________ Member No. ____________________

Members will use this form in reporting DAILY to the Reference Clearance Bureau. All inquiries answered direct to non-members.

FORM 4. Form showing Information Sent to Non-Members of the Bureau

Should the information on the account prove to be satisfactory and at a later date a store notify the bureau that it has closed the account for any reason, all members recorded as having been interested in the account are automatically notified of the action taken by the reporting member and the details given. This automatically serves as a warning to the stores where the applicant has an account. The credit man, on receipt of this information, then proceeds to deal with the account as he sees fit.

Taking another typical example of the operation of the bureau, suppose Mrs. John Smith asks for credit and gives two Fifth Avenue stores as references. The store to which the application is made fills out a form (Form 6) which is printed in "ditto" ink. Each store has a code number and this number is entered in the proper place to indicate for whom the reference is being cleared.

In filling out the form the stores are requested to give the full Christian name and initials of the applicant, the exact address, former address, occupation, and business address to insure adequate comparison. The form is taken to the office of the bureau by a messenger

REFERENCE CLEARANCE BUREAU
of the
Associated Retail Credit Men of N. Y. City, Inc.
15 WEST 37th STREET

Name ______________________________
(Surname first)

Residence ______________________________

Former Residence ______________________________

Business Address ______________________________

Date ______________________ Member No. ______________

INDICATE BY CHECK

NEW ACCOUNT	CHANGE OF ADDRESS

MEMBERS WILL USE THIS FORM IN REPORTING DAILY TO THE REFERENCE CLEARANCE BUREAU ALL CHANGES OF ADDRESS AND ALL NEW ACCOUNTS OPENED. NOT CLEARED THROUGH THE BUREAU.

Form 5. Form Used in Reporting Change of Address or New Accounts Not Cleared Through the Bureau

who makes the trip according to a regular schedule a number of times a day. Enough copies of the form are made on duplicating machines to go to each of the stores mentioned as references. These stores fill in their ledger experiences, and on the next delivery the various copies of the form go back to the bureau. The report is then sent to the original store. The information is also entered on a master card which is kept on file at the office. This card is similar in form to the report and is filed permanently in the bureau.

If a request for clearance is received and the master card on file at the bureau has sufficient information not older than 90 days, a report is made out immediately and sent to the member requesting it. When necessary the reference is cleared by telephone. When a store does not answer within 24 hours, a second request is sent.

Out-of-town references are also cleared by the bureau, which sends for information to merchant-owned associations in other cities or to out-of-town stores directly. When a bank is given as a reference, a separate form is used. This is sent in duplicate so that a copy may remain on file with the bank.

The bureau also keeps the credit man advised of any unusual happenings to an account that his store may be interested in, such as unusual activity on the part of an individual in

PLEASE USE DITTO INK ONLY

REFERENCE CLEARANCE BUREAU
Of The
Associated Retail Credit Men of N. Y. City, Inc.
15 West 37th Street

To	For	Card	Clear

Ledger experience is desired on the individual named below — All information will be kept confidential.
Name

Residence

Former Residence

Occupation

Business Address

Selling how long	Highest Credit	Owing now	For months of

Payments are made (Indicate by check mark)

30-60	60-90	90-120	120 & Over	As agreed	Uns' Ity	Att'ys Col'n	P & L

Account Active	Account Inactive	When last sold

Refers to

General Remarks

PLEASE DO NOT WRITE IN THIS SPACE

Form 6. Form Used in Clearing a Reference

opening new accounts, unusually heavy buying on an account, or information to the effect that an imposter is buying on an account. Information of this type is automatically flashed to all stores interested.

A special daily bulletin is furnished to all stores, publishing items that may be of interest to the retail credit man, reported to the bureau by members. This bulletin service gives the details of bad check operations, advises caution in extending credit to individuals who do not appear to be responsible, publishes notifications of domestic troubles, and any other items that may interest the credit man. Through national affiliation with other bureaus, the credit standing of individuals moving from one city to another is reported for the benefit of the retail merchants.

The importance of getting the Christian name in full, the present and former addresses, and the business connections of an applicant at the time the application is made is impressed upon the members of the bureau. This oftentimes works to the advantage of the inquiring store, as information of a very unsatisfactory nature may be on file concerning the individual at a former address.

With a good reference clearance bureau in operation the fraudulent buyer, the bad check operator, and the poor credit risk meet their Waterloo when they seek to ply their professions amongst the retail trade. A telephone call to the bureau oftentimes brings offenders of these types into the hands of the law.

The most important medium for credit basis today is that of the experience of other houses with the risk in question. The reference clearance bureau is to the retail credit grantor much what the clearing house is to the banks. It is a pivot around which retail credit business may circulate with reasonable safety; it is a clinic for the chronic credit abuser; it is the pulse of the retail charge business. It is a beacon light on an uncharted sea; a nucleus for a credit men's organization and for the promotion of a credit man's welfare. It is an educational center for disseminating among the public such propaganda as will aid a credit man's work.

All authorities on the subject of retail credits are of one opinion—that credit may be granted with more profit and safety to the person whose record is that of paying his bills promptly and keeping his word and living up to his contracts, rather than to a man or woman who can present a substantial financial statement that is not backed up by a record for the prompt payment of accounts.

Suits and Judgment Publishing Companies.—These companies issue services giving information pertaining to suits and judgments. While, of course, a lawsuit may be the result of an honest dispute, it is important to know the facts.

Newspapers.—Clerks in credit departments glean information from newspapers about business embarrassments, such as judgments, receiverships, foreclosures, bankruptcies, bad checks, fires, business losses, and lawsuits In this manner may also be obtained information with regard to separations, divorces, and debts.

LEGAL LIABILITY.—It is important to know whether the one to be charged is legally liable. This requires attention especially in connection with purchases made by minors, and also in cases where credit is given because someone other than the purchaser is relied upon to make payment.

Retail Collections

IMPORTANCE.—The retailer appreciates the value of the credit system as a stimulator of sales but is also mindful of its dangers. He knows that there is a limitation upon the amount of capital he may prudently tie up in outstanding accounts, also that he must avoid disproportionate bad debt losses. These factors, if not properly controlled and regulated, may not only sap profits but lead to serious business embarrassments. Accordingly it becomes essential not only that the responsibility for making credit decisions be entrusted to a competent credit department but that this department be supplemented by an efficient collection department.

No credit man is infallible; there are bound to be errors of judgment, betrayals of confidence, and adverse changes in conditions which cannot be foreseen. A **symptom of a weakened condition** is tardiness in making payment—this status challenges the attention of the collection department. Loose collection policies and methods aggravate risks, whereas close and proper treatment makes possible escape from losses on poor risks. The collector may greatly help or mar the work of the credit department, consequently both these departments should establish a relationship of close and complete co-operation.

FUNCTIONS OF THE COLLECTOR.—Primarily, he must collect as promptly as possible all due obligations. Many retailers suffer, sometimes seriously, because of lax collections. Failing to collect debts due, they find themselves unable to meet their obligations, thus impairing their own credit standing; besides, the longer a collection is deferred, the less collectible the account becomes. Cases have been known where retailers, feeling tender about making any efforts to collect, have invited disastrous consequences. Such a policy is inconsistent with the present-day conception of business. Debtors today should be educated to the understanding that the drawing of their attention to an indebtedness due is not intended as any reflection upon them, but is a businesslike reminder.

The duty to collect should be assigned to one fully qualified. **Retail collectors** do not always deal with people experienced in business and so must be particularly tactful, although not servile. They should, in a considerate, resourceful way, adapt themselves to circumstances and be as forceful and persistent as the situation requires.

Preparedness.—To properly plan their procedure, they must be well informed regarding the actual standing of the debtors as well as regarding the experience of their houses. The credit department files and advices should be at the collector's command.

OUTLINE OF SYSTEM.—Collectors' efforts must not be along haphazard lines. To pursue a methodical course, they must avail themselves of the benefits of records systematically kept.

Statements.—Sending a statement is usually the **first step** in the collection program. It may be sent without any notation whatever and merely to serve as a reminder, or it may bear appropriate comments.

Letters.—Letters usually begin by courteously drawing the debtor's attention to the status of the account and continue with increasing firmness to demand payment.

Visiting Collectors.—It is advantageous to have collectors make personal calls upon debtors. Such collectors should be of a type that will reflect credit upon their houses. They must be gentlemen, commanding the respect of whomever they visit. They acquire a good understanding of human nature which should train them, when they do not collect, to form correct conclusions as to whether promises may be relied upon or whether the issue must be forced. In other words, in the event they do not immediately effect collections, they should have the ability to probe deeply into the debtors' affairs so that their reports may be guides for further action.

Attorneys and Collection Agencies.—When collection departments reach the conclusion that the usual amicable efforts will not get the results, claims are sent to lawyers or collection agencies. This is an expensive method and, while used as a last resort, must not be too long deferred, else the chances of collection will be greatly handicapped. For form of proof of debt used in case of suit see Form 7.

Follow-Up Systems.—Some concerns follow the practice of sending statements monthly only. Others send statements on **fixed days,** which may be the 1st, 10th, 15th, or 20th of the month. The **effective plan,** as has been stated above, is to follow up communications by allowing a reasonable time in accordance with location and the quality of the account, and to avoid entirely the impression that the communication is merely an incident of statement day. This psychology may be further stressed by incorporating in letters references to specific items relative to the account so as to give the communication a distinctive character. In exceptional cases it may be

STATE OF .... }
COUNTY OF .... } *ss:*

Before me............................a Notary Public in and for said County and State, personally appeared............................who, being by me sworn in due form at law, doth depose and say that he is:

(1) An officer to wit, the .... of .... a corporation organized under the laws of the State of.. ....

(2) A co-partner with............................ doing business as ....

Hereinafter designated as Claimant

That the annexed account against .... is correctly copied from books of original entry of Claimant, that within the knowledge of deponent, the charges were made in the said books at or about time of their respective dates; that the goods for which said charges were made, were sold and delivered as charged, that the charges are correct; and the account just and true, as stated; that said Claimant holds no security for said indebtedness, or any part thereof; that the whole of said sum of............................ Dollars and ....Cents with interest thereon from the............................ day of ....A. D. 19.........is due and owing, and that no part of said principal sum or interest has been paid or in any manner settled, and that there are no deductions or offsets of any kind except such as are specified and credited on said annexed account.

....
Individual Signature.

Corporate Seal

Sworn to and subscribed before me this ....

day of .... *A. D 19* .....

....
NOTARY PUBLIC.

INSTRUCTIONS:—If an individual, cross out (1) and (2); if a partnership, cross out (1); if a corporation, cross out (2). Fill in all remaining blanks.

FORM 7. Proof of Debt

considered policy to give the communication a mechanical or routine aspect. It may also be considered desirable to include sales offers as an indication that the account is valued. In short, the collector should strive to collect but retain the friendship of the desirable account.

CLAIMS DEPARTMENTS.—Very frequently the customer refrains from making payment pending adjustment of a claim. Whether the claim is made in good faith or not, it is important that the credit and collection departments be informed of its existence so that they may co-operate to the fullest extent with the claims department to avoid its being the cause of a delay in effecting the collection. All claims should receive prompt attention. The nature of the claim may give the credit department significant information.

Mercantile Credit Granting

MERCANTILE CREDIT.—This is the power of one merchant to obtain goods or services from another for business purposes, upon the promise to pay money therefor at an agreed upon time in the future.

TERMS OF SALE.—

C. B. D.—Cash Before Delivery.—Sellers resort to these terms when unwilling to take any credit risk.

C. O. D.—Cash on Delivery.—In such transactions the seller does not agree to take any credit risk and should accept cash, money orders, or certified checks only. The seller assumes the risk of having the purchaser refuse to accept the goods, involving expense of handling, transportation, etc., and possible deterioration. **Deposits** are sometimes required as a protection against such losses.

Dating.—Dating is the period of time added to the terms of sale. For instance: **2% 10 days, net 30 days, 60 days extra,** meaning, terms 2% cash payable in 10 days, or net 30 days, with 60 days added dating. A bill charged on Oct. 1 subject to terms of 2% 10 days, net 30 days, with a dating of 60 days, is not due until Jan. 1. In other words, terms of credit begin to run from Dec. 1. The purchaser may pay: (a) between Dec. 1 and Dec. 10 and deduct 2%; (b) on Jan. 1 without deducting any discount; (c) prior to Dec. 1 and deduct 2% plus interest on the net amount for the time unexpired to Dec. 10.

Season Dating.—The duration varies with the different lines of business, being in some instances for a period of several months. It is given to induce the placing of orders in advance of manufacture or importation.

7/10/60 Extra Terms.—These terms mean that the bill is due 70 days from its date, less 7%. The buyer may wait until date of maturity at the end of 70 days and deduct his full 7% discount. The 7% is not a bonus or premium to induce earlier payment, and is really not a cash discount at all. In such cases, if the bill is paid before the end of 70 days, the customer may deduct 7% and also interest on the net amount for the unexpired time. It is usual for the seller to allow 8% on the gross amount of such bills paid within 10 days from date. When such bills are paid after 70 days, the purchaser theoretically forfeits the entire discount. In practice, however, this penalty is not usually enforced. The treatment of these past-due bills lacks uniformity. Some houses allow the full 7% discount and charge interest for overdue time at the rate of 6% per annum. Others require the debtor to lose 1% discount for a month overdue. When the delinquency is prolonged, it is not uncommon to disallow any discount.

E. O. M.—End of Month.—This arrangement provides that all bills charged during a month are to be treated as dated the last day of the month, from which date the terms of sale begin to run. In other words, all shipments between, let us say, June 1 and June 30 will be regarded as being dated June 30. These terms are created only by special agreement.

R. O. G.—Receipt of Goods.—Meaning the time allowed for taking discount begins to run from the time the goods are received by the purchaser.

The Credit Risk

CREDIT POLICY.—Credit policies vary. Natural conservative and liberal inclinations are influenced by business circumstances. Among the

considerations are the strength of the selling position, selling plans, organization problems, scale of production, overhead, financial limitations, and the margin of profit. Credit policy should be in harmony with profitable business building, and should be a promoter of sales expansion, having due regard for financial and bad debt loss limitations.

GENERAL FACTORS.—As a general proposition credit is based on the applicant's character, capacity, capital, and business prospects.

Character.—Integrity is indispensable and a high sense of obligation a prime requisite.

Capacity.—Under this head is considered the applicant's ability, habits, training and experience, location and organization, and business record and its trend.

Capital.—Financially, the condition should be adequately liquid. This is determined by considering the quick assets, the amounts and their availability, in relation to the liability demands. In this connection there should also be considered the volume of business, the merchandise and accounts receivable turnover, the requirements for pay-roll and other running expenses, insurance, outstanding purchase contracts and other commitments, orders on hand, and ripening unrecorded obligations such as taxes and contingent liabilities.

Business Prospects.—The stability of the line of business, its problems and condition, as well as local and general economic, financial and political conditions, are elements considered by the analyst.

Sources of Information

MERCANTILE AGENCIES.—R. G. Dun & Company and The Bradstreet Company.—Prior to the advent of the mercantile agency credit granting was frequently based on superficial and unreliable information. When the buyer came to the market he made arrangements with the seller respecting his credit and the creditor was compelled to rely chiefly upon the information obtained during such interviews and his own impressions. He had no facility for properly checking up the information, nor was he in a position to keep informed as to the trend of the debtor's business. Owing to the loose and haphazard credit methods, creditors suffered severe losses and credit conditions were especially demoralized during periods of depression.

In 1837 a disastrous panic occurred. The crash caused a record-breaking number of commercial failures. This aroused merchants to the need of adequate trustworthy credit information and led to the establishment of the mercantile agency. R. G. Dun & Company was founded in 1841 and Bradstreet's in 1849.

These agencies started systematically to compile records and to make credit investigations. At first their reports were comparatively meager. Many merchants objected to "prying" into their affairs and numbers of creditors were unwilling to impart their knowledge and experience to others. However, in the course of the development of the country, and as business became more complex, there was a constantly growing appreciation of the need and value of the agency service, and it was steadily improved to meet the new requirements. Today the mercantile agencies are honored as powerful business-building institutions. With a network of organization encircling the globe, composed of over 200 branch offices, thousands of trained reporters, many specializing in given fields, upwards of 100,000 correspondents, attorneys, and representatives located in every important trading

R. G. DUN & COMPANY

☛ Please note if Name, Business and Address correspond with your inquiry

Grocery & Hardware

Rv.
HORTON & FLYNN

Hastings, Nebraska
Adams County

WILLIAM HORTON, age 46, married
JOSEPH FLYNN, " 42, "
Cond. 32 700 Feb. 1, 1923

RECORD

Partnership formed Jan. 22, 1922. Succeeded William Horton, who bought the business from his father, John Horton, in 1900, paying $3,000 cash and transferring a lot valued at $600. Horton had worked for his father from the time that he left school. At first used the trade style Horton Bros., but from 1914 to 1922 he used his individual name.

Flynn was reared here and has been employed in various capacities. From 1910 to 1922 he was a traveling salesman in this and two adjoining counties for a wholesale grocery. He says he put in $4,000, and that each partner has a half-interest. Before he came in, the business was hardware only.

STATEMENTS

DATE	ASSETS	LIABILITIES	NET WORTH
Feb. 1, 1922	$10,250	$2,525	$7,725

Jan. 21, 1923, Horton gave the partners as above and submitted the following statement from inventory of Jan. 1, 1923, which he signed for the firm:

Assets:	
Merchandise on hand	$ 9,135
Outstanding accounts	1,970
Notes considered good	150
Cash on hand	100
Cash in bank	135
Fixtures	1,000
Ford delivery truck	350
Total	$12,840
Liabilities:	
For merchandise due and past due	3,640
Surplus	$ 9,200

Insurance on merchandise $7,000. Carry employers' liability insurance. Sales per month $2,600.

GENERAL INFORMATION

Present statement shows an increase of $1,475 in the net worth, and is accepted by local authorities as correct. Are carrying a larger stock than a year ago, and owe more. Carry a general line of hardware, which is said to have inventoried at $6,735; the grocery stock, at $2,400. They say that they inventoried the fixtures, which are modern, at cost, without depreciation.

Balance at bank is usually small, and obligations there are indorsed by Mrs. Horton, who is said to have some means.

Their groceries are sold almost entirely for cash, and the accounts receivable are practically all for hardware. The store is well located, within two doors of the post office.

Both partners bear good reputations, are attentive to business, but both have expensive families and are thought to draw more money than they should. Do not discount; pay interest on some past due bills.

(Continued)

Form 8a. R. G. Dun & Co.'s Report

center in the world, the agency is equipped to reach the applicant for credit however obscure or wherever located and to issue a report regarding his business history, training, habits, his financial condition, as well as the experiences and opinions of others to whom he is known; in other words, to what extent he has established his credit, how he is maintaining it, and what the future indications are. The agencies are so universally recognized that it is common for the credit applicant to send them voluntarily a copy of his financial statement and other relevant information. The service facilitates the opening of thousands of accounts and emphasizes the value of a

☛Please note if NAME, BUSINESS and ADDRESS correspond with your inquiry

HASTINGS, NEBRASKA
Adams County
(CONTINUATION)

Rv. GROCERY & HARDWARE
HORTON & FLYNN
32 700 Feb. 1, 1923

TRADE REPORTS

Their own references report:

H.C.	TERMS	OWE	PAYMENTS	REMARKS
$ 500	Monthly	$ 100	Prompt	
280	60 days	125	Prompt	Second bill we have sold
140	30 days	0	Prompt	

Other trade consulted report:

H.C.	TERMS	OWE	PAYMENTS	REMARKS
$ 165	1–30	$ 94	Slow	60 days
30		8	Prompt	
350	30 days	250	Fairly prompt	
76	Monthly	76	Slow	
50	Weekly	30	Slow	7 days
374	2–10 net 60	45	Prompt	
1,614	30 net	1,411	Slow	From 30 to 60 days. We sell them continuously and charge them interest on all past-due indebtedness.

Investigation made Nov. 7, 1922, showed that of ten houses, six reported payments slow from 10 to 60 days, four reported payments prompt.

FIRE RECORD

No record of fire loss. G $3\frac{1}{2}$

FORM 8b. R. G. Dun & Co.'s Report (*Contd.*)

confidence-inspiring credit record. It helps the creditor to detect the unworthy and to deal appropriately with the deserving and sound credit applicant. It has vastly expanded the domain of credit operations. Investigations are not only made upon receipt of inquiries but in anticipation of them. Likewise pioneering work requiring considerable investment is done to extend the area of the service and improve its quality so that subscribers may, with the necessary sense of security, enlarge their volume of credit business.

Contents of Report.—See Forms 8 and 9.

1. Antecedents or past record. This includes the date when the business began; the names and ages of individual proprietors, partners

THE BRADSTREET COMPANY

ACME DRESS CO. .... MFRS. .... NEW YORK CITY
Tom Jones, Aged 42, Md. (MANHATTAN)
Arthur Brown, Aged 51, Md. 14 West 26th Str.

FINANCIAL CONDITION:

The following statement was received by mail, May 18, 1923, giving above partners' names.

"Financial condition on April 30, 1923, as per Inventory.

ASSETS

Merchandise at Cost	$21,285.10	
Accounts receivable (actual value)	20,776.26	
Cash in bank	4,516.03	
Cash on hand	6.74	
Machinery (actual value)	1,967.69	
Other assets (actual value)	410.08	
		$48,961.90

LIABILITIES

Open accounts for merchandise	$16,953.91	
Accrued interest	130.50	
Net worth	31,877.49	
		$48,961.90

None of the above indebtedness is past due. Not liable as indorser for others. None of the accounts receivable are assigned or pledged for loans. Sales the past year $170,543.20. Insurance on Merchandise $18,000. Never had a fire.

(Signed) ACME DRESS COMPANY
By Arthur Brown"

They carry a fairly substantial bank balance, have occasionally been given accommodation in the past, which they have always discharged promptly; reported owing nothing at bank at present.

PREVIOUS STATEMENTS SHOW:

DATE	ASSETS	LIABILITIES	NET WORTH
April 30, 1921	$38,217.65	$15,132.12	$23,085.53
April 30, 1922	$44,318.11	$16,848.96	$27,469.15

Allowing for some depreciation, means are estimated at about $30,000.

TRADE OPINIONS:

H.C.	PAYMENTS	OWE	COMMENTS
$ 500	Not due	$ 500	Sell occasionally on 70-day terms.
600	Prompt	100	Sold for about one year on 70-day terms.
1,500	Prompt	400	Sold for about two years on 70-day terms.
2,000	Prompt	0	Sell on 70-day terms. Do not limit.
2,000	Prompt	2,000	Sold for about two years on 70-day terms.
2,500	Not due	500	New account. Sold on 70-day terms.
3,000	Prompt	0	Sell on 70-day terms.
3,000	Prompt	200	Sell on 70-day terms. Last transaction recently.

FORM 9a. Bradstreet Co. Report

of a firm, or officers of a corporation; the past record of the persons interested and a brief history of the business

2. Summary of totals of assets and liabilities in previous years
3. Itemized copy of latest balance sheet
4. Comments regarding figures
5. Observations respecting the business and its prospects
6. Trade opinions. Under this head is given the ledger experiences of others and the opinions of credit men to whom it is known
7. Fire records

ACME DRESS CO.................................New York City

Two others report occasional dealings on regular terms, account satisfactory, but give no details.

ANTECEDENTS:

On Jan. 4, 1920, certificate of trade style was filed. Jones was employed as salesman for about seven years, but Dec. 17, 1918, became a partner in firm of York & Atkins; he withdrew on Jan. 2, 1920, to form present connection. Brown was formerly employed as a cutter and commenced on own account Aug. 10, 1905, as a member of the firm Butler & Brown, but withdrew Nov. 11, 1907, and was again employed for a time. Nov., 1914, he commenced individually, locating at 220 E. 19th St., and is said to have made considerable headway financially, continuing until formation of subject firm. It is understood that all his liabilities were paid in full.

FIRE RECORD:

Not known to have suffered loss by fire.

GENERAL REMARKS:

Occupy a loft about 25 x 85 feet. Some goods are manufactured outside. Both partners give full time to the business and are well spoken of personally. They specialize in medium grade evening dresses, selling principally to out-of-town department stores and business seems to be increasing.

60....1..............S C.................................June 2, 1923.

Form 9b. Bradstreet Co. Report (*Contd.*)

Ratings.—Another function of the agency is to assign ratings to each concern investigated and to compile these ratings in books published quarterly. (See Forms 10, 11.) The rating consists of **two symbols,** the first denoting estimated capital after allowance for shrinkage, etc.; the second, the relative grade of credit, designed to reflect the character, past record, present condition, ability, and business prospects. The rating is intended to serve merely as an index to the contents of the report. It does not give a basis for reaching credit decisions. Obviously it is frequently difficult to express several points of information often of divergent nature in the rating. It may have been thoroughly accurate when assigned but be inapplicable at the time the book is being consulted. As a matter of expediency, ratings may be used as a guide in passing upon small rush orders. They are also serviceable in making periodical revisions of credit files—changes possibly drawing attention to the need of later reports. Ratings may also be useful in compiling lists of prospective accounts.

OTHER SOURCES.—The success of the mercantile agency is measured by the confidence it inspires in the integrity and quality of its service. Although in the main the reports give valuable information, reports will

make mistakes—even as do credit men—delays will set in, and material facts be misinterpreted or undiscovered. For these reasons, besides the desire of getting information viewed from different slants, credit departments find it advantageous to supplement the mercantile agency service with other sources of information.

SPECIAL AGENCIES.—These agencies cover more limited fields than do the mercantile agencies. They may lack the enormous files containing antecedent information, as well as other advantages incident to the far-reaching organizations, but within their scope they are prepared to render

R. G. Dun & Co.

Estimated Pecuniary Strength				General Credit			
				High	Good	Fair	Lt'd
AA	Over $1,000,000			A1	1	1½	2
A+	$750,000	to	$1,000,000	A1	1	1½	2
A	500,000	to	750,000	A1	1	1½	2
B+	300,000	to	500,000	1	1½	2	2½
B	200,000	to	300,000	1	1½	2	2½
C+	125,000	to	200,000	1	1½	2	2½
C	75,000	to	125,000	1½	2	2½	3
D+	50,000	to	75,000	1½	2	2½	3
D	35,000	to	50,000	1½	2	2½	3
E	20,000	to	35,000	2	2½	3	3½
F	10,000	to	20,000	2½	3	3½	4
G	5,000	to	10,000	....	3	3½	4
H	3,000	to	5,000	....	3	3½	4
J	2,000	to	3,000	....	3	3½	4
K	1,000	to	2,000	....	3	3½	4
L	500	to	1,000	....	....	3½	4
M	Less than		500	....	....	3½	4
Blank				1	2	3	4

FORM 10. Commercial Ratings—R. G. Dun & Co.

an excellent service. They may confine their efforts to certain trades and industries, and to certain localities. Many of them build up past record files in good proportion to their spheres of operations and the more influential receive financial statements from debtors, but their distinctive activity is the gathering of ledger experiences.

TRADE CREDIT BUREAUS.—Many trades associations organized to promote co-operation in the treatment of common problems also establish credit bureaus. These bureaus enjoy the advantages accruing from concentrated attention to debtors and credit conditions in the special lines in which the membership is interested. Some such bureaus merely function to provide their members with the machinery for the interchange of ledger

experiences. Others follow the more ambitious program of compiling reports containing past records, current financial statements, experiences and comments of creditors and others.

These bureaus primarily serve only their members. They seek information direct from the debtor and elsewhere regarding his past record and present financial condition and also make investigations as to the manner of meeting obligations and observing contracts and established trade customs. Infor-

The Bradstreet Co.

Estimated Wealth				Grades of Credit		
G	$1,000,000 and above			AA	A	B
H	500,000	to	$1,000,000			
J	400,000	to	500,000	A	B	C
K	300,000	to	400,000			
L	250,000	to	300,000			
M	200,000	to	250,000			
N	150,000	to	200,000			
O	100,000	to	150,000	B	C	D
P	75,000	to	100,000			
Q	50,000	to	75,000			
R	35,000	to	50,000			
S	20,000	to	35,000	C	D	E
T	10,000	to	20,000			
U	5,000	to	10,000			
V	3,000	to	5,000	D	E	F
W	2,000	to	3,000			
X	1,000	to	2,000	D	E	F
Y	500	to	1,000	E	F	
Z	0	to	500			
Blank				A	B	C

Form 11. Commercial Ratings—Bradstreet Co.

mation may be obtained in the local market by oral or mail inquiries, and other markets are reached by making arrangements with other agencies or with correspondents or by establishing reciprocal relations with business houses in different trade zones; and where such contacts are formed with the principal centers, the service is greatly strengthened. (See Forms 12, 13.)

INTERCHANGE BUREAUS.—Local associations of credit men operate interchange bureaus. Most of these bureaus are members of a central office conducted by the National Association of Credit Men, forming a national credit interchange clearance system.

NATIONAL WHOLESALE MEN'S FURNISHINGS ASSOCIATION, INC.

200 Fifth Avenue, New York

This report is furnished at your request, must be considered confidential and not disclosed to anyone not a member of the association.

June 1, 1923

HOUSE & APPEL, Inc. — St. Louis, Mo.

	H:C:	OWING:	
x100 A Order 115			For Shipment at once terms 7–10, E.O.M.
30 B Net	400	304	237 Past Due. Terms reg. sold for years to date.
33 C Cash Account			
197 B Discount 60 days	3,100	2,700	Terms reg. and Spec. sold for years to date.
206 A Slow 4 months	1,016	567	567 Past Due. Terms 6–10, 5–30, 30x. Order for Spr. not filled.
227 C Discounts and prompt	156		Sold from Jan., 1920 to Dec., 1922
E Discount, slow and by notes	10,000	2,500	2,500 Past Due. Terms reg. sold for years to 1923.

COPY OF STATEMENT RECEIVED BY MAIL AT THIS OFFICE

Nov. 1, 1922

HOUSE & APPEL, Inc. — St. Louis, Mo.
JOHN HOUSE, Pres.
ADOLPH APPEL, Treas. and Mgr.

Started business as Black & Appel in 1914; Capital at start $3,000.00.

Assets

Cash in bank	$ 3,682.27
Outstanding accounts good	6,620.85
Merchandise on hand, cost value	16,563.00
Furniture and fixtures	9,960.53

Liabilities

For merchandise open account due and past due	$12,867.43

Ever suffer loss through fire? No.
Is there any suit or judgment against you? No
Are you endorser or security for anyone? No.
Is there any lien of any kind on your stock or assets? No.
Have you pledged, transferred or assigned any of your accounts receivable? No.
Do you keep an itemized record of your daily sales? Yes.
Do you deposit daily receipts intact? Yes.
Have you ever failed in business? No.
Are there any claims in attorneys' hands against you? No.

The above statement both printed and written has been carefully read by the undersigned, and is a full and correct statement of our financial condition, according to inventory of Sept. 1, 1922.

(Signature) House & Appel, Inc.
By: Adolph Appel, Treas.

Dated: Nov. 1, 1922

Form 12. Report of National Wholesale Men's Furnishings Assn., Inc.

NATIONAL CREDIT OFFICE

45 East 17th Street, New York

The following report is furnished in STRICT CONFIDENCE, at your request, by the National Credit Office, as your agents, attorneys, servants and employees, for your exclusive use, as an aid in determining the advisability of granting credit.

It is expressly agreed, in consideration of the receipt of this information, that the contents of the report will not be communicated to the person reported nor to anyone else.

Please note whether name, business and street address correspond with your inquiry.

50 ADD.AS –4– C FB.

UNIQUE DRESS CO., Inc.
Manufacturers
JOHN DOBB, President
S. T. MOONEY, Secy.-Treas.
THEODORE SANDS, Vice-Pres.

New York City,
132 W. 29th St.

October 12, 1922

GENERAL COMMENT:

A difference of opinion is expressed regarding the concern and in a number of instances the account is not cared for, however, where sold in a few instances on regular terms payments are met promptly, at times anticipating by request and no one appears to be in possession of later figures than those rendered June, 1922.

ANTECEDENTS:

New York corporation organized November, 1920, authorized capital of $150,000, of which $114,000 is claimed paid in the corporation succeeding to the business formerly conducted under the same style as a copartnership by Dobb and Mooney.

Dobb and Mooney were originally employed as salesman and manager respectively, until March, 1919, when with one Irma Gurlan they commenced trading as Dobb, Gurlan & Mooney. In January, 1921, Mrs. Gurlan withdrew. Dobb and Mooney continued until the present corporation was formed.
Theodore Sands was at one time connected with the Fashion Textile Company, later employed by others.

STATEMENTS:

Feb., 1921, claimed a net worth of $70,179 over debts of $67,421. Submitted the following balance sheet as of May 31, 1921, by S. T. Johnston, C.P.A.

Assets

Cash in banks	$ 3,767.84	
Cash on hand	52.62	
Accts. Rec. less res.	50,573.46	
Loans receivables	350.00	
Notes rec. less res.	9,518.01	
Accts. rec.—Contractors	3,612.24	
Mdse. inventory	48,449.61	
Mach. furn. fix., less dep.	7,965.85	
Rent dep.	3,000.00	
Salary adv.	478.95	
Organization exp.	1,550.00	$129,318.58

Form 13a. Report of National Credit Office

NATIONAL CREDIT OFFICE

45 East 17th Street, New York

The following report is furnished in STRICT CONFIDENCE, at your request, by the National Credit Office, as your agents, attorneys, servants and employees, for your exclusive use, as an aid in determining the advisability of granting credit.

It is expressly agreed, in consideration of the receipt of this information, that the contents of the report will not be communicated to the person reported nor to anyone else.

Please note whether name, business and street address correspond with your inquiry.

UNIQUE DRESS CO., Inc., City
Sheet 2, October 12, 1922, ABD.AS –4–

Liabilities

		$129,318.58
Notes payable—Banks	$32,500.00	
Notes payable—Others	5,000.00	
Accts. pay less res.	24,049.19	
Trade acceptances pay	8,085.19	69,634.38
Capital stock issued	$64,000.00	
Deficit	4,315.80	$ 59,684.20

ANALYSIS:

Above figures indicate liquid assets consisting of accounts receivables and cash amounting to about $54,000 to meet obligations of about $70,000. These figures compared with those rendered February, 1921, indicate a decrease in net worth of $9,000 while liabilities have increased about $3,000.

INVESTIGATION:

Trade consulted at this date finds account checked as follows:

Amounts	Terms	Payments
1. Declined lack of confidence.		
2. $2,000.	Regular	Prompt.
3. Not care for in future.		
4. $2,000.	Regular	Prompt, owe nothing.
5. Do not want.		
6. Declined.		
7. Do not want.		
8. Do not want.		
9. Declined lack of confidence.		
10. $800.	Regular	First in some time, not keen.
11. $300-$400.	Regular	Prompt, owe nothing.
12. $3,000-$4,000.	Regular	Prompt, owe $2,000.
13. $4,000-$5,000.	Regular	Prompt and anticipate, owe $3,000.
14. Do not want.		
15. Do not want.		
16. Do not want.		
17. Declined.		
18. Do not care for.		
19. Lack of confidence, do not want.		
20. Do not care for.		
21. Do not care for.		
22. Did not care for in the past.		

INQUIRY:

Inquiry throughout the year has been constant though not excessive.

SUMMARY:

In view of the difference of opinion expressed for the present time, the account is looked upon as one where individual judgment should be exercised.

Form 13b. Report of National Credit Office (*Contd.*)

Many trade and other bureaus operate similarly. These bureaus and agencies deal primarily with ledger experiences. In some instances the plan is merely to supply inquiring members with the names of those to

NEW YORK CREDIT MEN'S ASSOCIATION — INTERCHANGE BUREAU REPORT.

The accuracy of this report is not guaranteed. The experiences given have been gathered in good faith from members and sent to you by this Bureau as your agent without liability for negligence in procuring, collecting, communicating or failing to communicate the information so gathered.

Report on:

MORRIS & GLOVER

Plumbers' Supplies

SUMMARY

(TO BE FILLED IN BY MEMBERS)

	Number		Number
Experience		Pays when due	
Discounting		Unsatisfactory	
	Amount		Amount
Owing		Past Due	

MANNER OF PAYMENT

"Manner of Payment" is indicated in column below by figures.

1. Discounts
2. Pays when due
3. Days slow
4. Slow but considered good
5. Settles by notes
6. Pays notes when due
7. Slow and unsatisfactory
8. Settles with Trade Acceptance
9. Pays acceptances when due
10. Makes unjust claims
11. Takes unearned discounts
12. Refuses to pay interest
13. Pays draft
14. Don't pay draft
15. Account now in attorney's hands
16. Collected by attorney

SPECIAL REMARKS

A. Pays according to agreement
B. Neglects to accept shipment on arrival
C. Carries out contract
D. Asks extensions of contracts
E. Asks for cancellations
F. Makes cancellations
G. Asks postponement of delivery
H. In market for quick delivery

TERMS OF SALE

CIA - Cash in Advance
COD - Cash on Delivery
CAD - Cash against Documents
SDBL - Sight Draft against Bill of Lading

Group No. G.	How Long Sold	Highest Credit in Past year	Amount Owing	Amount now Past Due	How Long Past Due	Date of Last Sale Mo & Yr.	Manner of Payment (use fig.)	Terms of Sale	REMARKS
#4-	6'04	8270	3236	2074	5-30days	1'23	3*	2/10/30	*30-60 days
1-	12'19	-	-	-	-	12'19	3*	2/10/60	*60 days
2-	2'20	300	-	-	-	9'22	4	60 days	
4-	sev.yrs	1848	361	-	-	12'22	80-90 days	60 days	A Satisf. account
4-	-	220	-	-	-	3'22	-	2/10/30	
4-	3'16	-	-	-	-	6'19	10-16 & 7	30 days	
4-	6'13	-	-	-	-	9'14	3*	2/10/60	*30 days
4-	-	900	-	-	-	-	1	30 days	
4-	yrs.	800	772	700	120days	12'22	3	2/10/30	
2-	8'21	-	-	-	-	8'21	2	1/10/30	
2-	sev.yrs	2878	648	-	-	-	1	2/10/30	
4-	1'20	385	385	209	2-3mos.	12'22	4	-	
4-	7'13	60,000	30,000	-	-	-	T/A	2/10 or	Active acct.
4-	8'21	10,000	700	700	30days	11'22	4-8	30 days	

FORM 14. Interchange Bureau Report—New York Credit Men's Association

whom the account is known. Others adopt a system of gathering and disseminating the information. It is the policy of some bureaus to give free to each contributing member a copy of the report giving the combined

experiences reported. Some bureaus require each member to file a complete list of accounts as well as all new applicants for credit, giving the bureau material for effective clearances. (See Form 14.)

FOREIGN INTERCHANGE BUREAU—National Association of Credit Men.—This is a mutually co-operative, non-profit-making bureau. Its membership represents practically every industry and every section of the country. It is conducted to serve American manufacturers, merchants, banks, and export commission houses engaged in foreign trade. The bureau recently announced that it had credit files on 140,000 firms in foreign countries and commission houses in the United States who make purchases in the American market for export. The annoucement adds: "Facts and figures given are gathered from over 600 sources of information that have known and have been passing on these accounts for months and years, and know the character of the debtor, his resources, his requirements, manner of meeting drafts; the terms of sale to which he is accustomed, his paying habits, and how to rate the account from the standpoint of an American shipper or bank. Details of these essentials are features of every report."

Original reports giving accurate detailed recent information are issued to inquiring members. These reports contain the following items of information:

1. How long sold.
2. Terms of sale.
3. Highest recent credit.
4. Date of latest dealings.
5. Amount now owing.
6. Amount past due.
7. Time past due.
8. Manner of payment.
9. Credit limit.
10. Credit decisions.
11. Comments.

LEDGER EXPERIENCES.—These supply information of inestimable value. Whether obtained through an interchange bureau or other agency, the quality and merit of the service depends upon the trustworthiness and extent of the clearance. A well-prepared report should cover the following important points:

1. First orders.
2. Increased orders.
3. How long sold.
4. Fixed line of credit.
5. Highest credit currently extended.
6. Amount owing.
7. Amount past due and how long.
8. Manner of meeting previous payments.
9. Trade and credit abuses.
10. Comments and opinions.

When several of its members are interested in a foreign account which has become financially involved, the bureau holds meetings for the purpose of organizing the creditors for concerted action.

Reciprocal reports are sent free of charge to all who contribute information. In addition to the experience interchange report (Form 15), a supplementary report (Form 16) is issued. The supplementary report contains the name of the customer, age, nationality, location, language used in correspondence, branches if any, kind of business, number of employees, when established, whether corporation, partnership or individual owner, where purchases are made, financial references, capital, general reputation, etc.

The bureau obtains information not only from its members but from every

FOREIGN CREDIT INTERCHANGE BUREAU

National Association of Credit Men

41 Park Row New York, N. Y.

The accuracy of this Report is not guaranteed. Its contents are gathered in good faith from members, and sent to you by this Bureau as your agent without liability for negligence in procuring, collecting, communicating or failing to communicate the information so gathered.

REPORT ON: Juan Doe y Cia
Havana,
Cuba. & New York

2/16/22
Sheet #12-W
Inquiry #8190

TERMS OF SALE

1. Open account payable........days from date of
   (a) Invoice
   (b) Factory shipment
   (c) Export shipment
2. Open account payable immediately upon receipt of
   (a) Documents
   (b) Invoices
   (c) Goods
3. Account guaranteed. How? ....
4. Voluntary remittance with order.
5. Sell for cash in advance only.
6. C. O. D. or S/D to R. R. B/L.
7. Cash against documents under confirmed L/C.
8. Cash against documents under unconfirmed L/C.
9. Bank acceptance of bank in this country at........days.
10. Bank acceptance of foreign bank at........days.
11. Draft at........days sight through bank for collection d/a.
12. Draft at........days date through bank for collection d/a.
13. Draft at........days sight through bank for collection d/p.
14. Draft at........days date through bank for collection d/p.
15. Draft at........days sight through bank for collection documents to customer.
16. Draft at........days date through bank for collection documents to customer.
17. Consigned stock.
18. Cash against shipping documents, dock receipt or warehouse receipt
    (a) At customer's office
    (b) At paying agency other than bank
19. ....

MANNER OF PAYMENT

OPEN ACCOUNT

A. Discounts.
B. Pays when due.
C. Slow

DRAFTS

H. Anticipates payment.
I. Accepts and pays promptly.
J. Accepts promptly-delays payment.
K. Delays acceptance-pays promptly.
L. Delays both acceptance and payment.
M. Makes unjust claims.

GENERAL

N. Account settled by attorney.
O. Account settled by arbitration or compromise.
P. Account still in dispute.

WE RATE THE ACCOUNT

Q. High.
R. Good.
S. Satisfactory.
T. Unsatisfactory.
U. Undesirable.

How Long Sold	Terms of Sale: Key No.	Terms of Sale: Details	Highest Recent Account	Date Last Dealings	Amt. now Owing (Including outstanding drafts)	Amount Past Due	Number Days Past Due	Manner of Payment (Use	Rating Code)	Credit Limited (If Any)	Credit Declined (Give Reason)	REMARKS
Yrs		Days										
12	1	90a	40000	current	35000	20000	1yr.	B				Note "A"

Note "A" Have sold this account for many years, and payments always satisfactory up to Declaration of Cuban Moratorium. At that time they owed us $45,000 and have reduced this to $25,000 and owe now for only 90 days merchandise. Think they are good for their ordinary requirements.

4	1	60a	5288	10-'18					T			Note "B"
			Note "B" They cancelled this order after shipment was made shortly after the armistice was declared expecting prices to go down. We were obliged to sell at a loss of $40 which was written off of their account.									
Old a/c	1	30	2650	10-'21				C	S			
2	16	120	1650	11-'20	1650	1650	year	J	U			Note "C"
			Note "C" Understand recently embargoed our account with attorney.									
1921	s/d	60	1200	9-'21								
	Docs. vs acc.											
3	Adv. & s/d for bal.		1069	10-'20	99	99		paying on a/c				
6mo.	1	10a	1000	9-'21				C	T			
Yrs	9	60	852	1-'22	792			B	S	Our agents for Cuba.		
1920	7		378	4-'20				C				Note "D"
			Note "D" Part of bill pd. Oct. 1921, were unable to collect balance and had to charge off $123 to profit and loss.									
2	1	30a	64	11-'20				B/C	R			
2	1	30a	50	10-'21				B	S			

ORIGINAL COPY

FORM 15. Foreign Interchange Bureau Report—National Association of Credit Men

available reliable source and is doing considerable work in educating the foreign buyer to the importance and advantages of giving credit information, including financial statements. It keeps its members informed of unusual

FOREIGN CREDIT INTERCHANGE BUREAU

National Association of Credit Men

41 Park Row New York, N. Y.

#11150
11-S

Although obtained from an authoritative source, the accuracy of this report is not guaranteed.

1. Report on Estaban Escalda y Cia
2. Address Ave. Florida 47 (Number) (Street) Mexico City (City) Mexico (Country)
3. Classes of goods Dry Goods
4. Languages of correspondence English, Spanish, French
5. Character of business: Wholesaler X Retailer X Commission Merchant
   Manufacturer Importer X Exporter Agent X Forwarder
6. Buys chiefly: Domestic Foreign U.S. 75%, Europe 25% (Countries and prop. from each)
7. Organization Partnership (Corporation, partnership, etc.) 1900 (Year established) Mexico (Country where organized)
8. Branch houses Vera Cruz, Tampico (Number) (Location)
9. Financial reference Royal Bank of Canada, Nat'l City Bank, N.Y., 1st Nat'l Bank, El Paso, Texas.
10. Capital $150,000 Volume of business (Annual sales) No. of employees 20
11. Date of report June 15, 1923.
12. Managers or partners (name, title, age, nationality) Estaban Escalda, Sr. partner age 60. (Spanish), Francisco Alvaro Jr. partner age 45. (Spanish).
13. Capital stock controlled by (name, address, nationality)
14. Agents for
15. Relative size of concern: Very large Large X Medium Small
16. General reputation of concern: Very Good.
    Insurance $100,000.

SUPPLEMENTARY REPORT

FORM 16. Supplementary Report—Foreign Interchange Bureau, National Association of Credit Men

requests and any unethical practices of foreign merchants, and it writes for members moral suasion letters to delinquent debtors.

The Weekly Confidential Bulletin is sent to members containing infor-

mation as to credit and economic conditions in foreign countries. This bulletin also offers the members a facility for exchanging general information and views relative to principal points in foreign trade technique and foreign credit practice.

11-19 West 19th Street, New York, N. Y., ... 192 .

Kindly give us below YOUR EXPERIENCE with

Name .... Business ....

P. O. ....

From whom we have .... order for $ ....
(Indicate whether first order)

ALL INFORMATION WILL BE CONSIDERED STRICTLY CONFIDENTIAL

Yours truly,

APPROVED AND ADOPTED BY
NATIONAL ASSOCIATION OF CREDIT MEN

To ....

		MANNER OF PAYMENT ANSWER—YES OR NO
Sold since .... To	...	Discounts
Terms	...	Prompt and satisfactory
Largest amount owing recently .... $	...	Slow but collectible
Total amount now owing .... $	...	Slow and unsatisfactory
Amount past due .... $	...	Days slow
Other information	...	Accepts C. O. D.'s promptly
....	...	Settles by Trade Acceptances
....	...	Account secured
....	...	Notes paid at maturity
....	...	Makes unjust claims
....	...	Collected by attorney

RETURN THIS TO US

FORM 17. Reciprocal Credit Service Blank—National Assn. of Credit Men

The reporting of an unusual number of first and increased orders challenges the interest of the analyst; it may be thoroughly warranted or may disclose an unwholesome activity or the attempt to open new accounts owing to the loss of standing with the old creditors. The balance of the detailed information relates to the debtor's ability to pay and the degree of

confidence enjoyed by him among creditors, tending to measure his credit power; where confidence is lacking it may appear that the debtor will be severely pressed for payments, his credit closely limited and his buying market narrowed, these factors adversely affecting his business prospects and at times proving disastrous.

ORAL INVESTIGATIONS.—Ledger experiences and opinions of others are sought by some credit departments through investigations made by

THE MARTINDALE MERCANTILE AGENCY

New York City

CONFIDENTIAL "FORM A"

To......Jonathan & Morris..........**Att'y**..**New York**....4–22–21.......19..
Expires Dec. 31, 1923

At..... Sacramento, Calif...

Dear Sir:—Kindly favor us with as full a report as possible of the party, or firm, named below, which we pledge you we will treat in the strictest confidence. Mail to us in enclosed stamped envelope. We will gladly reciprocate your kindness whenever opportunity occurs. A prompt reply will be duly appreciated.

Subscriber's No. 76824 N

Name....*Frederick E. Nelson Co*...........
Address......Pasadena, Calif...........
1. **Business**......Ready to Wear...........
2. **Full individual names**......Frederick Ensign Nelson...........
3. **How long in business**......About five months...........
4. **Habits and business ability** ... Fair.... **Inclined to speculate**....No...
5. **Estimated value of stock**......About $50,000.00...........
6. **Repute as to promptness**......See other side...........
7. **Any home debts owing**..Yes...**Any claim in attorney's hands**..Yes.......
8. **Ever sued**..Yes........**If so, give particulars**..Collections and law suits....
9. **Ever failed**....No......**If so, give particulars**...........
10. **Net unencumbered value of real estate**......None...........
11. **Any resources outside of business**......None...........
12. **What is your idea of net worth**......See other side...........
13. **Getting ahead**......No..........**Holding own**..Hardly......**Going behind**

Other information...........

Continue report on other side or make report on your own stationery, typewritten if possible, but cover all points in your answer

PLEASE RETURN THIS BLANK WITH YOUR REPLY

Form 18a. Report from Agency to Client, based on Attorney's Report to Agency—Martindale Mercantile Agency (face)

personal representatives. This method may often be conducive to speed and better quality. The quality of the report will depend largely upon the investigator himself. If he is alert, tactful, and properly trained, he will frequently obtain information of a confidential and delicate nature which the informant might be reluctant to give to agencies for general distribution. To proceed intelligently the investigator should be as fully informed as possible about the account and the reasons for the investigation.

Recognizing the valuable character of the information, houses who seek it are careful to cultivate reciprocal relations with other credit departments, giving freely and fully all information which may throw light upon the case to inquiring creditors.

RECIPROCAL CREDIT SERVICE.—The National Association of Credit Men, in its constant and persistent efforts to promote co-operation, has adopted the form shown on page 931. Attached to the form is a duplicate sheet differing only in that instead of the words "Return this to us," appear these: "Keep this on your files. We give you below our experience."

ATTORNEY REPORTERS.—Companies such as the U. S. Fidelity & Guaranty Co. and the Martindale Co. publish books containing names of attorneys throughout the United States from whom subscribers may draw

Frederick E. Nelson Company was incorporated a few months ago. In May, 1920 they claimed to have net assets of $120,000.00 according to the following statement·

$49,000.00 in merchandise
53,000.00 in fixtures
10,000.00 in accounts receivable
35,000.00 advance payment on rent
39,000.00 balance due from stockholders and other assets

They claimed at that time to owe $60,000.00, $15,000.00 of which was owing to the National Bank of this city. Since that time we have represented three claims of the aggregate sum of $4,000.00 against this company, and have been compelled to file suit on one of them. We understand that they are now in New York trying to make some sort of an adjustment with their creditors.

They have a very fine store but have not met with the success anticipated. Nelson was formerly in the Millinery business.

He claims that additional capital has been invested in the business and that he is now on a sound financial basis, but we are of the opinion that the situation is dangerous for creditors.

The information given on this sheet is communicated in strict confidence as between Company and Client, and it is expressly stipulated that this information is obtained by the officers, clerks, attorneys and employees of the person to whom it is given, and it is expressly understood that the reliability of this information is not guaranteed, nor does the party receiving it hold this Agency liable for mistakes of its agents, attorneys or servants. The receiver of this agrees not to disclose it to anyone, and to use it only in the legitimate course of business.

FORM 18b. Reverse side of Form 18a.

credit reports. The reports may give information pertaining to the business ability, habits, capital, local reputation among merchants, banks and others, location, and manner of payments. The attorney may also give information as to lawsuits, court and public records, and is frequently able to report whether claims are in the hands of local attorneys—most significant information. To use the service advantageously inquiries should contain specific questions and give the attorney guiding information, whenever possible. In urgent cases the desired information may sometimes be obtained by wire. (See Forms 18, 19, 20.)

BANK INFORMATION.—Unlike mercantile credit departments, banks do not as a rule freely give credit information. Dealing in larger units, lending depositors' funds, and operating on a narrower margin of profit, banks are constrained to be conservative, and borrowers, recognizing this, are induced to give information which the banks cannot disclose to others without violating confidences.

UNITED STATES FIDELITY & GUARANTY CO.
New York City

TO BE SENT TO SUBSCRIBER

CONFIDENTIAL (11) **Privilege expires**

City......New York, Sept. 11,.......192..

To......Jos. E. Weber, Atty.,........at......Bayview, N. J...............

Dear Sir:—Kindly mail to us in enclosed stamped envelope full information, based on your knowledge and investigation, as to the age, character, habits, capital, responsibility and promptness in meeting obligations of

Full name.. ...Thos. Bergman & Aaron Ganz......City....Bayview, N. J....

Street and No.......41 Main Street......Business.........................

Your prompt reply will be greatly appreciated, as Delayed Reports are of no Value.

Subscriber No. 133025

ANSWER HERE:

Thos. Bergman & Aaron Ganz.

They claim stock worth $1,000.00. My opinion not worth $200.00. Claim business is poor. One (Ganz) claims $750.00 to $800.00 in bank in own **name.** *In* **business** *6 years. Place poorly located. When I called there, there was a card game going on. Do not think they are a good credit risk. Advise C.O.D., altho they seem to be* **honest.**

Has he assumed any obligations as a bondsman?. ....If so, to what extent?..

All the facts tending in anywise to a just estimate of party's credit-worth are highly desirable. Do not under any circumstances divulge the name of the party desiring this report.

FORM 19. Report from Agency to Client, based on Attorney's Report to Agency—U. S. Fidelity & Guaranty Co.

REED & DIXON
Attorneys at Law
Grimesland, N. C.

Feb. 18th, 1922.

U. S. Fidelity & Guaranty Co.,
75 William Street,
New York, N. Y.

Gentlemen:

Re: I. H. Foote

On the 21st ulto. we find that we made a report for your subscriber No. 164149. Claims are beginning to come in, but he is taking care of them. On account of the number of reports, we have checked him up carefully.

He owes the bank over $10,000.00 and owes other creditors, running his indebtedness to $50,000.00 or $60,000.00. He has his home in his own name, valued on the tax books at $10,000.00. He lists his stock of goods and all personal property for taxes at $30,000.00—last May. He is regarded around town as being overbought His banker advised us that he does not think he should be extended further credit unless he takes care of his account so as to leave the debt about where it was.

He has another store at Hayesville, N. C., which goes under the name of some bargain house. That section has been heavily hit with boll weevil and low prices on farm products. He has a warehouse, in which he stores goods for his retail store. Opinion here seems to be that he could easily reduce his inventory and buy oftener and keep his stock in as good condition. About three or four years ago he had a fire. He is regarded as honest, but prone to buy too heavily.

We are enclosing copy of this report, so that you can send it to your subscriber.

Yours truly,

REED & DIXON,
(Signed)

R–L

FORM 20. Report from Attorney to Agency

However, a good many banks seek information from mercantile credit departments and gladly give information to those whom they can rely upon to understand and discreetly use it. They may not go into detail but will certainly not say anything to mislead and will convey a very fair impression of their experience and opinion.

Customers sometimes refer to banks which, in reply to inquiries, write vague, indefinite, and superficial letters which may only cause the analyst to suspect that the case requires thorough investigation. When bank information seems essential it may be obtained through one's own bank, but such favors should, of course, not be abused.

TRAVELING CREDIT REPRESENTATIVES.—The credit department may have representatives who visit credit applicants in and out of town for the purpose of determining credit treatment. This obtains particularly in houses taking large advance orders for goods to be manufactured. Such representatives may make exhaustive investigations, including the examination of financial books and records, contractual commitments, orders on hand, cost calculation, and all other features which may affect the risk in a given case. The banks and other creditors may also be visited.

SALESMEN.—Some concerns ask salesmen to fill out long credit information blanks. This policy is pursued particularly when small dealers are being solicited, upon whom it would be difficult to obtain adequate credit information through the usual sources. Other houses prefer to limit the scope of the salesman's report to matters which come within his own observation, such items being, the location, condition of stock—does the stock appear to be clean, active, well kept, and well balanced—competency of management, local reputation, local conditions, and names of creditors.

Points included in the **long form** of report are as follows:

1. How long present business is established—date established if new business?
2. Past experience.
3. Is the location well adapted to the line of business.
4. Estimate of present value of stock.
5. The condition of the stock.
6. Buying and managerial ability.
7. What kinds of insurance does he carry and how much of each?
8. To what kind of trade does he sell?
9. Local information as to his ability.
10. Local information as to his habits.
11. What rent does he pay?
12. What is the total monthly cost of business?
13. How many clerks are employed?
14. Is he doing a profitable business?
15. What are the average monthly sales?
16. What proportion of the business is done on a credit basis?
17. Is the owner or any of the owners engaged or interested in other ventures?
18. Is any real estate owned—kind, valued at, mortgaged?
19. If a new enterprise, what is the amount of capital and in what form—cash, other assets (describe and give amount)?
20. Buy principally for the following houses—give names and addresses.

Most of the above points are covered by the information given in the mercantile agency reports. While some salesmen, in a tactful way, secure

valuable credit information without any prejudice to their position as salesman, others unduly antagonize the buyer, defeating the purpose of the visit. The salesman's time, expenses, and efforts should be devoted essentially to soliciting business. His assistance in credit reporting is sought only to the extent that the information cannot advantageously be otherwise obtained and his contact with the customer should be distinctly a co-operative one.

CORPORATION MANUALS—Poor's and Moody's.—Each of these manuals is published annually and covers railroads, large industrials, and public utility concerns. In each is found the most recently available income statements and balance sheets, a summary of past financial statements for several years, and a description of the important assets. They contain also a brief history of the formation and development of the corporation.

TRADE AND BUSINESS NEWSPAPERS, FINANCIAL AND ECONOMIC MAGAZINES, AND CREDIT PUBLICATIONS.—In these are to be found information of considerable value respecting conditions in particular lines of business, the trend of general financial and economic forces, as well as articles of an educational nature. *The Credit Monthly*, organ of the National Association of Credit Men, the most widely read credit periodical, publishes items of personal and general interest to credit men, and also instructive articles on credit methods, legislation, and problems affecting the work of the credit man.

The trade and business papers print, besides news of a general character, items of specific interest; such as incorporations, changes in business names, changes in personnel and organization, changes in capital, litigation, receiverships and bankruptcies, court decisions; and news items pertaining to particular lines of trade, business and finance.

BUSINESS REVIEWS AND BAROMETRICS.—The mercantile agencies, monthly letters issued by a number of the commercial banks, and reports compiled and issued by the United States government, and also private institutions and companies, give reviews of basic business and financial conditions and statistics indicating business and financial tendencies.

Mercantile Collections

IMPORTANCE.—Granting credit enables a merchant greatly to increase his sales, but to conserve its benefits he must be a good collector, quickening the turnover of his capital and minimizing the risks. A capable collector is an invaluable ally of the credit department. Careful and sound as the credit man may be, misconceptions are bound to creep in, and accounts good at the time the credit was passed upon may retrograde. The weakened condition may be reflected in tardy payments and it behooves the collector to effect the payment before it is too late. Furthermore, the collector is concerned with more than the duty of inducing delinquent customers to pay. He must be broad-gauged enough to realize that not infrequently desirable accounts find themselves unable to meet their obligations promptly and that while no proper efforts must be spared to make the collection as early as possible, he must avoid doing anything to offend and lose the account. In other words, the aim of the qualified collector is not only to collect but also to retain for his house the good-will of a good account.

QUALIFICATIONS OF THE COLLECTOR.—To accomplish this dual purpose, the collector must be well trained and thoroughly efficient. He should be tactful, resourceful, analytical, perservering, and experienced.

PREAPPROACH.—The competent collector will have as a background a knowledge of all the available credit information as well as of the ledger history of the account, before he decides upon the mode of handling it. The debtor may at times be slow pay because of negligence, carelessness, or the disinclination to part with funds; usually he is delinquent only because he cannot avoid it. Most business men understand that their payment record affects their credit standing and also may influence the treatment they receive when buying. The collector realizes that his efforts must be directed generally toward collecting from a fund insufficient to meet all due liabilities. The debtor in such condition is naturally less influenced by spasmodic routine appeals than by persuasive systematic methods. The inclination of the delinquent may be to pay preferably those who enjoy a particularly advantageous selling position and are strict in enforing credit terms, but the vigilant persistent collector gets the desired results by pursuing correct methods.

COLLECTION METHODS.—In trying to collect from the account whose good-will it is important to retain, as well as from the one requiring more drastic action, several steps are open to the collector.

STATEMENTS.—Usually the collection process is started by mailing a statement. The first statement is merely a reminder, drawing attention to an oversight or to negligence. This may be followed with more statements, sometimes bearing comments such as: "Please remit," "Evidently overlooked," "Kindly advise if you do not find above account correct."

LETTERS.—The first letter may be extremely mild and be followed by letters of varying degrees of forcefulness but increasing progressively in insistence. Distinctiveness is essential in a letter intended to be attention-compelling. The backward debtor is usually receiving collection communications all the time and becomes calloused to the routine, mechanical letter. Distinctiveness may be realized by injecting personality into the letter, referring to items in connection with the specific transactions or particular matters of interest to the debtor, and by a proper follow-up course. Letters sent at intervals—allowing time for return mail plus such further grace as the conditions may warrant, indicating that a response had really been expected to the previous communication—are much stronger than those sent on the first of month or other fixed dates suggesting that they are merely incidents of collection day. Letters should be clear, sincere, and in keeping with the tone of the collector's house; the attitude should be one of reasonable considerateness. While the collector should be as forceful and firm as the occasion demands, he should never be acrimonious. Definiteness is an important element. All promises accepted should be acknowledged and a definite date specified. In allowing extra time the collector will always fix a definite date when payment is to be made. It is also important that all correspondence from debtors be promptly answered. Delays and laxness on the part of the collector beget like treatment from the sluggish payer. No promise or threat should be made unless the collector is ready to perform; the failure to do so would tend to undermine his position. It is sometimes effective to address the letter to a particular officer, usually the president or the treasurer of the debtor company, and to have such letter signed by an officer of the creditor company.

DRAFTS.—When no satisfactory response is received to collection letters, the collector may try to force the issue by drawing on the debtor. Such draft may be deposited by the collector at his bank which forwards it to a

correspondent bank in the debtor's locality, or it may be sent by the creditor direct to the debtor's bank, or to a bank in the debtor's vicinity. In the latter instance a letter should be written to the bank and a small fee enclosed. Many credit men follow the practice of writing the names of customer's banks on the respective ledger accounts. These are taken from checks, financial statement forms, and reports. The names of local banks may be found in the mercantile agency rating books or in books published by bonding companies and collection agencies.

Usefulness of the draft as a collection instrument is limited. It usually finds the debtor resentful, or he is sensitive of the bank's opinion and apt to give some excuse, refusing to pay. The reason given is marked on the draft which is returned to the collector. Collectors frequently write the debtor that if payment is not received by a certain specified date a draft will be forwarded. If no response is received, collector may sometimes assume that to send the draft would only mean loss of time, and, instead of sending draft, resort to more drastic measures, notifying debtor of the decision. The debtor also may desire to avoid possibly aggravating the case by giving unsolicited knowledge of the situation to the local bank and prefer to proceed by direct methods.

BONDING COMPANIES AND COLLECTION AGENCIES.—These sell services consisting of collection letters, drafts, and a law directory. The U. S. Fidelity & Guaranty Co. and The Martindale Mercantile Agency offer, among others, such services to subscribers. Some of these agencies cover by bond, or otherwise guarantee the integrity of the attorneys listed. These collection services usually supply their subscribers with blank forms to be used for dunning letters, advanced draft notices, and drafts. (See Forms 21, 22, 23.) Drafts bearing the notice that "if not paid upon presentation the claim is to be turned over to an attorney" should not be sent until the creditor is ready to resort to the threatened action. The advance notice, or creditor's letter, informing the debtor that the forwarding of the draft means notice to the bank as well as placing of the claim, if draft is not honored, in the hands of an attorney, is frequently effective.

TELEGRAMS.—The collection telegram suggesting urgency has considerable psychological value. In using it, however, one must avoid liability under the laws against libel and extortion. The telegram should not contain a threat of bankruptcy or criminal prosecution. Following up a strong collection letter, the telegram, however general or cryptic its wording, very often does get the desired result.

Included on a **list of telegrams** recommended by the Western Union Telegraph Co. are the following:

1. Please settle your outstanding account. Unwilling to wait longer.
2. Account overdue. Unless receive prompt remittance collection proceedings will be instituted.
3. Regret cannot extend further credit until account is paid.
4. No reply to our letters. Expect to hear from you without further delay.
5. Will appreciate at least partial payment our account. Urgently need funds.
6. Must take sharp action if remittance not received at once.
7. Have you overlooked invoice of December tenth? Attention greatly appreciated. Reply our expense.

8. Cannot understand failure receive remittance. Account long overdue. Please advise.

9. In need of immediate funds. Can you assist with remittance?

ATTORNEYS.—The decision as to placing a claim with an attorney for collection should be well considered. On the one hand, to do so involves

COLLECTION LETTER.

Name ________ *Town* ________ *State* ________

Amount $ ________ *including Interest,*

Note or Account. *Date of Maturity* ________ *19*

Date sent ________ *19* *Date paid* ________ *19*

Remarks ________

Collection Letter of a holder of the bond of the

United States Fidelity and Guaranty Company

ISSUED BY THE DEPARTMENT OF GUARANTEED ATTORNEYS.

Home Office, Baltimore, Md.

Capital paid in cash, 5,000,000. Total Reasources over 36,000,000

R. HOWARD BLAND, Pres.

________ *19*

To ________

____

Dear Sir:

The amount of your overdue { *note* / *account* } { *with* / *without* } *interest*

is $ ________

The undersigned begs to advise that immediate settlement will obviate the necessity of placing this claim for prompt action in the hands of an Attorney who will, on our notice, be covered by the bond of the United States Fidelity and Guaranty Company, which we hold.

____

Holding bond of United States Fidelity and Guaranty Co.

No. ________ *Street*

________ City ________ State

Remittances and communications should be made to creditor direct and not to the U. S. F. & G. Co.

FORM 21. Collection Letter, First Step—U. S. Fidelity & Guaranty Co.

expense, and the probability of irretrievably losing the account; on the other hand, procrastination may seriously handicap the attorney's efforts. Attorneys who specialize in the collection of accounts, and who are organized for this service, usually can serve to best advantage. Care must be exercised in selection of such attorneys. A scheming attorney may delay in forwarding funds collected to his client or may resort to unscrupulous manipulations;

Advance Notice of Draft

FURNISHED BY THE
UNITED STATES FIDELITY AND GUARANTY CO.
DEPARTMENT OF GUARANTEED ATTORNEYS,
BALTIMORE, MD.

$ ______ Folio ______
Vs. ______
City ______
State ______
Mailed ______ 19
Settled ______ 19

BRANCH OFFICES:
ATLANTA, BOSTON, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, LOUISVILLE, MILWAUKEE, MINNEAPOLIS, NEW YORK, PHILADELPHIA, PITTSBURGH, SAN FRANCISCO, ST. LOUIS, ST. PAUL

ADVANCE NOTICE OF DRAFT FROM A HOLDER OF THE BOND OF THE
UNITED STATES FIDELITY AND GUARANTY CO.
ISSUED BY THE DEPARTMENT OF GUARANTEED ATTORNEYS,
HOME OFFICE, BALTIMORE, MD.

To ______

Dear Sir:—If we do not receive remittance to cover your overdue {note / bill} by ______ 19__ we shall on that date draw upon you through ______ Bank of ______ for ______ Dollars, with instructions to Bank, if our draft is not paid on presentation, to hand our claim for collection to an Attorney who will, on our notice, be covered by the bond of the United States Fidelity and Guaranty Company, which we hold.

Signed ______
Holding bond of United States Fidelity and Guaranty Co.
Street and No. ______
Date ______ 19 City and State ______

Advance Notice of Draft

FURNISHED BY THE
UNITED STATES FIDELITY AND GUARANTY CO.
DEPARTMENT OF GUARANTEED ATTORNEYS,
BALTIMORE, MD.

$ ______ Folio ______
Vs. ______
City ______
State ______
Mailed ______ 19
Settled ______ 19

BRANCH OFFICES:
ATLANTA, BOSTON, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, LOUISVILLE, MILWAUKEE, MINNEAPOLIS, NEW YORK, PHILADELPHIA, PITTSBURGH, SAN FRANCISCO, ST. LOUIS, ST. PAUL

ADVANCE NOTICE OF DRAFT FROM A HOLDER OF THE BOND OF THE
UNITED STATES FIDELITY AND GUARANTY CO.
ISSUED BY THE DEPARTMENT OF GUARANTEED ATTORNEYS,
HOME OFFICE, BALTIMORE, MD.

To ______

Dear Sir:—If we do not receive remittance to cover your overdue {note / bill} by ______ 19__ we shall on that date draw upon you through ______ Bank of ______ for ______ Dollars, with instructions to Bank, if our draft is not paid on presentation, to hand our claim for collection to an Attorney who will, on our notice, be covered by the bond of the United States Fidelity and Guaranty Company, which we hold.

Signed ______
Holding bond of United States Fidelity and Guaranty Co.
Street and No. ______
Date ______ 19 City and State ______

FORM 22. Collection Letter, Second Step—U. S. Fidelity & Guaranty Co.

When advised that Bank has handed Draft to Attorney
SEND THIS BONDING NOTICE TO THE
United States Fidelity & Guaranty Company
DEPARTMENT OF GUARANTEED ATTORNEYS
BALTIMORE, MD.

Take notice that the Draft we made on ________________ *debtor for* $________, *being unpaid, was, on our order, handed by the Bank to* ________________ *Attorney named in your latest revised List at* ________ *on* ________ 19

This notice is sent in accordance with the requirements of the bond which you have executed and delivered to the undersigned

Give Name and Address in Full

____

Address ________________

Date ________ 19

LET THIS STUB REMAIN IN BOOK

DRAFT { PAID / UNPAID *Folio No* ....
$________

Date ________ 19
vs ________ *Debtor*
of ________________
Bank ________________
at ________________
to be handed to Atty ________________
at ________________

Draft being unpaid, and handed Attorney by Bank, Bonding Notice sent to United States Fidelity and Guaranty Company ________ 19

SUBJECT: DRAFT ON
________________ DEBTOR
OF ________________

We take the name of your Bank from the "Guaranteed Attorneys List" of the United States Fidelity and Guaranty Company, Baltimore, Maryland.

DRAWER'S INSTRUCTIONS TO BANK
(To be torn off before presenting)

Gentlemen:
If our attached Draft *on this debtor* **is paid at maturity,** *please* **remit proceeds** *direct* **to us, the undersigned drawers thereof,** *and* **not** *to the United States Fidelity and Guaranty Company.*
If Draft is dishonored *on presentation* **or is not paid** *at maturity, please* **promptly deliver** *or mail it* **to the attorney named on the reverse hereof.**
We enclose stamped envelope bearing attorney's name and address.

$________ WITH CURRENT EXCHANGE

PLEASE SEE OTHER SIDE

DO NOT PROTEST

BANK WILL PLEASE TEAR HERE BANK WILL PLEASE TEAR HERE

STATEMENT

DRAWER'S INSTRUCTIONS TO ATTORNEY
NAMED IN LETTER TO BANK

Dear Sir: Payment of our annexed Draft having been refused, we, the undersigned drawers thereof, hereby authorize you to take prompt action for its collection on the terms stipulated on the back hereof.

Promptly acknowledge receipt and advise what course is best to pursue. Wire, if in your opinion the circumstances warrant.

Do not make any compromise nor receipt debtor in full for any partial payment. Remit all money collected direct to the undersigned by P. O. Money Order, Bank Exchange or Express.

☞ DO NOT DETACH FROM DRAFT

DRAFT DRAWN BY A HOLDER OF THE BOND OF THE
UNITED STATES FIDELITY AND GUARANTY COMPANY
DEPARTMENT OF GUARANTEED ATTORNEYS
Total Resources, over $26,000,000 **Home Office, BALTIMORE, MD.**

$ ________ WITH CURRENT EXCHANGE ________ 19

At ________ *sight, Pay to the order of the* ________________ *Bank of*
________ *the sum of* ________________ *Dollars,* WITH CURRENT EXCHANGE

Value received and charge to account of
________________ DRAWER

To ________________ DEBTOR ________ NO. ________ STREET
Address ________________ ________ CITY ________ STATE

PATENTED IN THE U. S. JULY 21, 1914

FORM 23. Collection Letter, Third Step—U. S. Fidelity & Guaranty Co.

an incompetent attorney may be unsuccessful and make necessary avoidable lawsuits.

When a claim is placed with an attorney, the collector should get an acknowledgment and at reasonable intervals keep in touch with the attorney until case is closed.

COLLECTION AGENCIES.—The points to be considered in connection with the attorney apply to collection agencies. The collector must be careful in their selection. Many agencies are short-lived. Many others have excellent records and are qualified to render reliable, efficient service. The good collection agency promptly tries to collect amicably, and advises suit only if considered necessary after the case has been, without undue delay, well considered. The collector should keep himself fully informed respecting cases in agency's hands.

NOTES.—Sometimes debtors whose open accounts are about to become due or are past due, offer notes in settlement. Such notes give good evidence of the debt and fix definite payment dates. Debtors may have more concern about the maturity dates of notes, which are their signed written promises and may be discounted or presented through their own banks for payment. Yet some debtors give notes so commonly that failure to honor them when presented rests lightly on them. In such instances acceptance of a note means that the creditor has given more time, waiving his right of action in respect to past-due accounts until maturity of the note. For this reason, and also in some cases to compliment customers, creditors prefer to keep accounts open and to make other definite arrangements for payments.

DEFECTIVE REMITTANCES.—Scheming debtors seek unscrupulously to gain time. To achieve this object checks may be incorrectly written out, or mailed unsigned. In the former case, creditor may make necessary corrections and write "amount guaranteed" over his indorsement. Likewise, if signature is omitted, creditor may write "signature guaranteed" or "amount guaranteed" over his indorsement and deposit the check. Should remittance slip or letter be received unaccompanied by check, creditor may avoid delay by depositing a draft for collection, notifying the debtor. Under any circumstances debtor should be given notice promptly so that if check is lost payment by the bank may be stopped. Naturally, these items must be handled with tact and good judgment.

EXTENSIONS.—It is not only a humanitarian act but good business judgment to allow extra time required by the worthy debtor who is in sound but temporarily illiquid condition. Should the creditor be uncertain as to the circumstances he should not hesitate to ask for information. Sometimes it is desirable to ask for part payment and give extra time on balance. Such arrangements should be made very definite.

Affairs of debtors may become so involved that they cannot meet obligations satisfactorily. They may ask creditors generally for extension of time. Creditors know that ordinarily such extension agreements tend to impair debtors' ability to obtain additional merchandise on credit and thus to further handicap them. However, should a debtor's reputation for trustworthiness, and the shape of his affairs be such as to inspire confidence, the extension should be granted and the debtor be given encouragement and assistance.

If it appears that debtors cannot extricate themselves from their difficulties, no time should be lost in arranging for friendly adjustments, or liquidation of the business. Creditors should avoid, if possible, expensive

bankruptcy proceedings. In dealing with honest insolvent debtors a fair offer of settlement should be speedily accepted, or the business be wound up outside of bankruptcy, if under the circumstances it is practical. Sometimes this is accomplished by trust agreements. No compromise should be made with one practicing fraud. He should be petitioned into bankruptcy and prosecuted if sufficient legal evidence is available.

ADJUSTMENT BUREAUS.—A number of such bureaus are conducted by, or in co-operation with, local associations of credit men. While some of these offer reporting and collection services, they are maintained essentially to handle involved and insolvent cases, either by way of friendly adjustment, or in bankruptcy. These bureaus encourage and promote creditors' co-operation, and may render available to creditors trained and competent administrators and organized facilities for economical, faithful handling of such cases. These bureaus handle claims of non-members as well as members. They are expected to conform to the high standards of the National Association of Credit Men, which thoroughly considers and actively interests itself in criticisms made to it by creditors or debtors. Some trade associations also operate efficient adjustment bureaus. Those bureaus which command the confidence of creditors and the respect of court officials may exert a powerful influence for good. By reason of their integrity, experience, and organization, they are qualified to render a businesslike, equitable, and effective service.

CLAIMS.—Credit and collection departments should keep themselves informed regarding all claims received. Delays in adjusting claims or controversies over disputed items may retard the efforts of collectors. Particularly in cases where there is the slightest doubt about the risk, there should be no avoidable delay in effectively disposing of claims.

FOLLOW-UP SYSTEMS.—To carry out effectively the distinctive and individualistic idea in collection systems it is essential that a logical sequence be followed. The time element is of utmost importance. The communication must not appear to be an incident of collection day but rather one sent because the expected reply to the previous communication had not, after a reasonable time, been received. That such follow-up plan may be operated without necessitating running through all of the accounts on the ledgers each day, mechanical systems have been devised. Such systems vary, of course, with requirements of the business; principal considerations being the number of accounts, variance and periods of terms of sale, and provision for expansion. The system should be as simple and economical as conditions permit, and one which provides for the automatic coming up of accounts, on the day previously designated, for attention. Some houses use cards. Name and address of debtor, amounts, and maturity dates, are marked on separate cards, each of which is filed in a cabinet under date when it is planned to give it attention, usually immediately after the due date. Cards thus coming up each day are compared with the ledger account and those having unpaid due items are given attention; action taken is noted on the card, which is then advanced to a later date, determined by the time necessary for return mail and quality of the account. On the later date the card comes up automatically for attention and this process continues until the matter is settled.

CLASSIFICATION OF ACCOUNTS.—It has been found useful to classify accounts according to industry and also location so that seasonal, local, and special trade conditions may be taken into consideration.

Legal Remedies

UNPAID SELLER'S LIEN.—When one sells merchandise without agreeing to extend credit to the buyer, such seller has a lien for the purchase price and need not part with the goods until he is paid. Likewise, even if the sale was made on credit terms, the seller would have a lien provided buyer became insolvent and the goods sold or part of them are in possession of seller.

The **Uniform Sales Act,** which has been enacted in a number of states, declares the following principles governing the unpaid seller's lien:

1. Even though the title or property to the goods has passed to the buyer, an unpaid seller has a lien on the goods, or right to retain them for the price while he is in possession of them. This right of lien may be exercised by seller, even though he is in possession of the goods as agent or bailee for the buyer, until the payment or tender of purchase price, when:

   (a) Goods have been sold without any stipulation as to credit.
   (b) The term of credit on which the goods were sold has expired.
   (c) The buyer becomes insolvent.

2. Where part delivery of goods has been made, an unpaid seller may exercise his right of lien as to the goods still in his possession, unless such part delivery has been made under circumstances showing an intention to waive the lien or right of retention.

3. An unpaid seller loses his lien on the goods when:

   (a) He delivers the goods to a carrier or other bailee for transmission to buyer, without reserving to himself the title or property in the goods or right to the possession thereof.
   (b) The buyer or his agent lawfully obtains possession of the goods.
   (c) He waives the lien (obtaining a judgment or decree for the purchase price of goods by the seller is not deemed a waiver of the lien).

ATTACHMENT.—Statutes of the different states vary widely with respect to the grounds on which creditors may "attach" the property of debtors. In general such grounds are:

1. Non-residence of debtor.
2. That debtor has absconded from the state or concealed himself within the state, intending to defraud creditors, or to avoid service of legal process.
3. That debtor has removed, or is about to remove, property, or to conceal, assign, or dispose of it in order to defraud creditors.
4. That debtor has obtained property from creditor by fraudulent representation, such as making of a false statement in writing.

BULK SALES ACT.—Dishonest debtors resort to the practice of conspiring with confederates to effect the sale of their property in bulk ostensibly for a price considerably below its value, or to make such sales and disappear to whereabouts unknown, in either instance the object being to defraud creditors. To afford protection to creditors, Bulk Sales Statutes have been enacted by the states which provide quite uniformly that unless the buyer notifies all

creditors of the seller that the sale is to be made, such sales are either void or voidable.

GARNISHMENT.—This is a statutory right given to creditors by the laws of some states to reach debts due debtors or their property in possession of third persons.

"STOPPAGE IN TRANSITU."—The Uniform Sales Act provides that the unpaid seller may stop goods in transit when buyer is insolvent, providing the goods were not shipped under a negotiable bill of lading which has been transferred to an innocent purchaser for value either prior or subsequent to the insolvency. Accordingly, seller may assume possession of goods subject to same rights as he had before parting with them. If debtor's insolvency becomes known to seller while goods are in transit, he should immediately ask the carrier to stop delivery of goods to debtor. The carrier may require that seller file a bond.

RESCISSION BY SELLER.—An unpaid seller who has stopped goods in transit or who has a right of lien, may exercise the right of rescission if such right has been reserved to him, in case buyer should default in payment for an unreasonable time. Upon such rescission, seller resumes title in goods and is thereafter not liable to the buyer upon contract to sell or sale; he may recover from buyer such damages as he has sustained by buyer's breach.

BAD CHECK LAW.—In general, the Bad Check Law is designed to combat those who issue or negotiate, with intent to defraud, worthless checks. The New York law had in it a requirement that one who issued or negotiated such check must be given 10 days' notice before prosecution, but the law was amended in May, 1923, eliminating the requirement of this notice. The amended law omits the following language of the old law, "unless such maker or drawer shall have paid the drawee thereof the amount due thereon, together with interest and protest fees, within ten days after receiving notice that such check, draft or order has not been paid by the drawee," and the following wording has been adopted in the new law, "where such check, draft or order has been protested, the notice of protest thereof shall be admissible as proof of such presentation, non-payment and protest, and shall be presumptive evidence that there was a lack of funds in or with such bank or other depository."

This amendment means that bad check passers will not be given the additional 10 days in which to make good their escape; moreover, many bad checks were drawn on out-of-town banks, and it was difficult to induce witnesses from such banks to appear and give testimony in a prosecution. The admissibility of the notice of protest in the new law dispenses with the necessity of producing officials from out-of-town banks as witnesses. The notice of protest bears testimony to the actual facts as to the bank account of the bad check passer.

Bankruptcy

WHO MAY BECOME BANKRUPTS.—See section on "Bankruptcy, Insolvency, and Receivership."

VOLUNTARY BANKRUPTCY.—Any qualified person may file a petition to be adjudged voluntary bankrupt. To such petition is annexed a full and true statement of all his debts and (so far as it is possible to obtain) the names and places of residence of his creditors; also a second schedule containing an accurate inventory of all his property. In the petition, which is

filed on a prescribed form, the petitioner acknowledges that he owes debts which he is unable to pay in full, that he is willing to surrender all his property, except such as is exempt by law, for the benefit of his creditors and that he desires "to obtain the benefits of the Acts of Congress relating to bankruptcy."

The insolvent debtor pursues this course to conserve his assets and to avoid their further shrinkage by reason of new losses and payment of insistent creditors to the prejudice of the interests of remaining creditors; and, at the same time, he seeks relief from his burden of provable debts.

INVOLUNTARY BANKRUPTCY.—A petition in involuntary bankruptcy may be filed by creditors against a debtor who has committed one or more of the so-called **acts of bankruptcy,** within 4 months of the commission of such act. This petition may be filed by three or more creditors who have provable claims which amount, in the aggregate, to $500 or over; or if all of the creditors of such person are less than 12 in number, then one of such creditors whose claim equals such amount may file a petition to have him adjudged bankrupt.

ACTS OF BANKRUPTCY.—See section on "Bankruptcy, Insolvency, and Receivership."

FILING OF PROOF OF CLAIM.—Claims against a bankrupt estate must be filed within one year from adjudication. If they are determined by judgment rendered within 30 days before or after one year from the adjudication, such claims must be filed within 60 days after the judgment has been rendered. The creditor should file his claim with the referee and get an acknowledgment that it has been approved. When the referee has allowed the claim, the creditor has established his right to a pro rata share of the distribution of the bankrupt's estate and to participation in the administration of the estate, including a vote at the election of the trustee as well as on all other questions submitted to creditors. The proper protection of a creditor's interests requires much more than the mere holding of an acknowledgment that his claim has been allowed. The results to be obtained depend upon the honesty and efficiency of the administration and this demands creditors' co-operation. The creditor should either himself take an active interest or wholeheartedly support trustworthy and competent creditors' representatives. To further effective co-operation among creditors, business men join associations of high standing who handle involved and bankruptcy matters. Instead of saving the charge by filing the claim direct with the referee, these creditors deem it good economy to file all claims with their associations, paying the fees and strengthening the service. Indifference on the part of creditors frequently makes it possible for scheming and unscrupulous persons to control and manipulate estates at the expense of all creditors. Representatives of credit men's associations and other reliable organizations are aggressively combating these sinister influences, and for obvious reasons should be unstintedly supported.

It is important that the **proof of claim (debt)** in proper order be filed within the prescribed time; otherwise a creditor, whose claim has been scheduled by the bankrupt, loses his rights and interest in the claim. Nor may he pursue the claim after the bankrupt has been discharged. A creditor has the right to delegate his powers to another by executing a power of attorney. Subjoined are given forms of **proof of debt** (Forms 24-27). If the proof of debt covers an open account, there should be filed with it a statement of the account, together with duplicate bills.

204 { In Bankruptcy—Form No 31
Proof of Unsecured Debt

In the District Court of the United States,

for the District of

In the matter of

} *In Bankruptcy.*

Bankrupt

At , in said district of
on the day of , A. D. 192 , came

of , in the county of in said district of
, and made oath, and says that

the person by (or against)
whom a petition for adjudication of bankruptcy has been filed, was at and before the filing of said petition, and still is justly and truly indebted to said deponent in the sum of dollars,
that the consideration of said debt is as follows:

that no part of said debt has been paid [except

that no note has been given therefor [except

that there are no set-offs or counter-claims to the same [except

that no judgment has ever been recovered thereon [except

; and that deponent has not nor has any person by his order, or to his knowledge or belief, for his use had or received any manner of security for said debt whatever.

Creditor.

Subscribed and sworn to before me this
day of A. D. 192 }

FORM 24. Proof of Unsecured Debt

VOIDABLE PREFERENCES.—A preference is voidable if given within 4 months of the filing of the petition or after filing the petition and before adjudication, if a pre-existing debt.

COMPOSITIONS IN BANKRUPTCY.—After the petition has been filed, the debtor may offer to settle with his creditors at a certain per cent of their claims. If such offer is accepted in writing by a majority in number of all creditors whose claims have been allowed and this number represents a

In the District Court of the United States,

For the District of

In the matter of

Bankrupt } *In Bankruptcy.*

At , in the district of on the day of , A.D. 192 , came of , in the county of in said district of and made oath and says that

the person by (or against) whom a petition for adjudication of bankruptcy has been filed, was at and before the filing of said petition, and still is justly and truly indebted to said deponent in the sum of dollars, that the consideration of said debt is as follows:

that no part of said debt has been paid [except

that there are no set-offs or counterclaims to the same [except

and that the only securities held by this deponent for said debt are the following:

Creditor

Subscribed and sworn to before me this day of A.D. 192 .

Form 25. Proof of Secured Debt

majority in amount of allowed claims, the offer is submitted to the court for confirmation. Before the application for the confirmation of the composition offer may be filed in the court, the consideration to be paid by the bankrupt to his creditors and the money necessary to pay all debts which have priority and the cost of the proceedings, must be deposited in a place designated by and subject to the order of the judge. The offer will not be considered by the court until the bankrupt has been examined in open court or at a meeting of his creditors, and has filed in court a schedule of his prop-

233 { In Bankruptcy —Form No. 14
{ Proof of Debt by Partnership.

In the District Court of the United States,

For the District of

In the matter of

Bankrupt

In Bankruptcy. No.

At , in the district of

on the day of , A. D. 192 , before me came

of , in the county of in said district of

and made oath and says that he is one of the firm of

consisting of himself and

of , in the county of and State of

that the said , the person

by whom a petition for adjudication of bankruptcy has been filed, was at and before the filing of said petition, and still is, justly and truly indebted to this deponent's said firm in the sum of dollars,

that the consideration of said debt is as follows

that no part of said debt has been paid [except

that no note has been given therefor [except

that there are no set-offs or counterclaims to the same [except

that no judgment has ever been recovered thereon except

and this deponent has not, nor has his said firm, nor has any person by their order, or to this deponent's knowledge or belief, for their use, had or received any manner of security for said debt whatever

Subscribed and sworn to before me this
day of A. D. 192

FORM 26. Proof of Debt Due Partnership

PROOF OF DEBT AND POWER OF ATTORNEY—480
CORPORATION

In the District Court of the United States,
for the District of

In the matter of

Bankrupt } *In Bankruptcy*

At in the District of
on the day of A. D. 19 , came
of in the County of and State of
and made oath and says that he is of the*
a corporation incorporated by and under the laws of
the State of and authorized to do business in
in the County of and State of and that he is duly
authorized to make this proof, and that the said Bankrupt by or against whom a petition for adjudication of Bankruptcy has been filed, was at and before the filing of said petition, and still is justly and truly indebted to the said corporation in the sum of
dollars, that the consideration of said debt is as follows.

and the same became due on the day of 19 , as per statement of said account hereto annexed and made a part hereof, that no part of said debt has been paid, that there are no set-offs or counterclaims to the same, and upon which indebtedness no note has been received or judgment rendered thereon, and that said corporation has not, nor has any person by its order, or to the knowledge or belief of said deponent for its use, had or received any manner of security for said debt whatever.

Subscribed and sworn to before me this
day of A. D 19 } ______________________(L. S)
(Name of Corporation)

{ Notary seal affix seal here } *Notary Public* by______________________
County. { Corporation seal must be affixed here }

To, or Representatives

The undersigned a corporation duly incorporated under the laws of the State of and duly authorized to do business at in the County of and State of
does hereby authorize you and each of you or your representative to attend the meeting or meetings of creditors of the bankrupt advertised or directed to be held at a Court of Bankruptcy or at such place and time as may be appointed by the Court for holding such meeting or meetings, or any adjournment or adjournments thereof that may be held and then and there from time to time and as often as there may be occasion, for it and in its name, to vote for or against any proposal or resolution that may be then submitted under the act to establish a uniform system of bankruptcy throughout the United States, approved July 1st, 1898, and in the choice of trustee or trustees of the estate of said bankrupt and for him to accept such appointment of trustees and with like powers to attend and vote at any meeting or meetings of creditors or sitting or sittings of the Court which may be held therein for any of the purposes aforesaid; also to accept any composition proposed by said bankrupt in satisfaction of its debt, and receive payment of dividends, and money due it under any composition or for the declaration of dividend or for any other purpose in its interest whatsoever, and with full powers of substitution and hereby revoke all other powers of attorney by it given herein.

In Witness whereof, *the said*
has hereunto caused these presents to be signed by its and its corporate seal to be affixed the day of 19*

______________________(L. S)
(Name of Corporation)

Signed, sealed and delivered in the presence of } By______________________
{ Corporate seal must be affixed here }

FORM 27. Proof of Debt Due Corporation, with Power of Attorney

erty and a list of his creditors. The judge will confirm the composition if satisfied that, (1) it is for the best interests of the creditors; (2) the bankrupt has not been guilty of any of the acts or failed to perform any of the duties which would bar his discharge; and (3) the offer and its acceptance are in good faith. Upon the confirmation of a composition, the creditors are paid in accordance with its terms and the case is dismissed.

DISCHARGE OF BANKRUPT.—After the expiration of one month and within the next 12 months subsequent to being adjudged a bankrupt, an application may be filed for a discharge. If it appears to the judge that the bankrupt was unavoidably prevented from filing application within such time, it may be filed within, but not after, the expiration of the next 6 months. The court will grant the application discharging the bankrupt from his liabilities (except those mentioned below), unless the bankrupt has committed one of the following acts, expressly forbidden by the Bankruptcy Act:

1. Committed an offense punishable by imprisonment as provided in the Act.
2. With intent to conceal his financial condition, destroyed, concealed, or failed to keep books of account or records from which such condition might be ascertained.
3. Obtained money or property on credit upon a materially false statement in writing, made by him to any person or his representative for the purpose of obtaining credit from such person.
4. At any time subsequent to the first day of the 4 months immediately preceding the filing of the petition, transferred, removed, destroyed, or concealed, or permitted to be removed, destroyed or concealed, any of his property with intent to hinder, delay, or defraud his creditors.
5. In voluntary proceedings been granted a discharge in bankruptcy within 6 years.
6. In the course of the proceedings in bankruptcy refused to obey any lawful order of, or to answer any material question approved by the court.

DEBTS WHICH MAY BE PROVED.—Debts of the bankrupt may be proved and allowed against his estate which are:

1. A fixed liability, as evidenced by a judgment or an instrument in writing, absolutely owing at the time of the filing of the petition against him, whether then payable or not, with any interest thereon which would have been recoverable at that date or with a rebate of interest upon such as were not then payable and did not bear interest.
2. Due as costs taxable against an involuntary bankrupt who was at the time of the filing of the petition against him plaintiff in a cause of action which would pass to the trustee and which the trustee declines to prosecute after notice.
3. Founded upon a claim for taxable costs incurred in good faith by a creditor before the filing of the petition in an action to recover a provable debt.
4. Founded upon an open account, or upon a contract expressed or implied.
5. Founded upon provable debts reduced to judgments after the filing of the petition and before the consideration of the bankrupt's

application for a discharge, less costs incurred and interests accrued after the filing of the petition and up to the time of the entry of such judgments.

Unliquidated claims against the bankrupt may, pursuant to application to the court, be liquidated in such manner as it shall direct, and may thereafter be proved and allowed against his estate.

DEBTS NOT AFFECTED BY A DISCHARGE.—A discharge in bankruptcy releases a bankrupt from all of his provable debts, except such as are:

1. Due as a tax levied by the United States, the State, county, district, or municipality in which he resides.
2. Liabilities for obtaining property by false pretences or false representations, or for wilful and malicious injuries to the person or property of another or for alimony due or to become due, or for maintenance or support of wife or child, or for seduction of an unmarried female, or for breach of promise of marriage accompanied by seduction, or for criminal conversion.
3. Have not been duly scheduled in time for proof and allowance, with the name of the creditor, if known to the bankrupt, unless such creditor had notice or actual knowledge of the proceedings in bankruptcy.
4. Were created by his fraud, embezzlement, misappropriation, or defalcation while acting as an officer or in any fiduciary capacity.

The National Association of Credit Men

The National Association of Credit Men, organized in 1896, with about 600 members, has grown to a membership of about 35,000 and has branches in all important cities of the United States.

The association unites credit men for effective co-operation. Among its **activities** are the following. It maintains legislative, prosecution, business service, credit interchange—domestic and foreign—adjustment, research, and educational departments. It issues reports on mercantile reporting and collection agencies and co-operates with them for betterment of the service. It improves and standardizes credit forms, instruments, and methods, publishes *The Credit Monthly*, dealing with items and problems of interest to credit men, and also issues numerous leaflets on credit subjects.

The "Credit Man's Diary and Manual of Commercial Laws," issued by the association annually, contains a compilation of federal and state statutes, with clear and concise explanations giving credit men valuable information concerning matters of common and vital interest.

The annual conventions offer intensive courses in credit principles and practice. The association conducts the National Institute of Credit, offering valuable training to juniors.

Through the efforts of the association, credit facilities are being improved, safeguards introduced, and abuses checked. The association is a factor in promoting the sound development of the credit system and in tending to place the work of the credit man on the plane of a profession.

The **principal office** of the National Association of Credit Men is located at 41 Park Row, New York City.

SECTION 19

OFFICE PRACTICE

CONTENTS

The Modern Office

Selection and Training of Office Employees

Business Departments of a Modern Office

(For list of forms, see complete table of contents.)

SECTION 19

OFFICE PRACTICE

The Modern Office

ORGANIZATION OF THE OFFICE.—Organization in its broadest sense is a plan which renders group effort effective and efficient by defining the duties and responsibilities of each member of the group. It is based upon assignment of duties, and as that is governed largely by the capabilities of the persons who are available, it follows that there can be no such thing as a standard organization.

Writers on this subject usually describe three distinct types of organization:

1. **Military**—in which flow of authority is in a direct line from one person to another and department heads have control of all functions within their departments, including employing personnel, securing equipment, and all other matters connected with work done by their departments.
2. **Line and staff**—a term used to designate those organizations in which much reliance is placed on frequent conferences of specialists selected from the personnel or employed as consultants.
3. **Functional**—which denotes that type of organization in which emphasis is laid on operations rather than on men. Each line of activity is in charge of a specialist, an expert, who controls and is responsible for that function, regardless of the location of persons who actually do the work.

All of these characteristics are present in every organization and classification of a particular organization under one or another of these three heads depends on the prominence given to the characteristics of that type.

In modern practice the tendency is toward the functional plan; but the most progressive managements do not overlook the value of the conference feature which provides executives with opportunities to get the benefit of the specialized knowledge and experience of their subordinates and promotes harmony by creating better understanding; nor do they lose sight of the fact that assignment of responsibility must be accompanied by delegation of authority necessary to secure accomplishment of the work and that the flow of authority must be clearly defined.

DEPARTMENTAL DIVISIONS.—As the size of an enterprise increases, the persons who attend to the different activities of the office are gradually segregated into groups or **departments**. Form 1 indicates the divisions into departments of a typical office of moderate size.

While the **unit of business organization** is usually the department, the term is often loosely used to designate units of departmental organization

that are more precisely described as **sections or divisions** with the result that it does not suggest anything definite as to the size or scope of units so designated. Nevertheless, the term "department" indicates a unit of organization, under executive supervision, controlling certain functions or groups of functions that, taken together, form a logical unit for control and supervision. Large departments may be subdivided into convenient working groups such as are properly called divisions or sections.

In some offices each department is conducted, as much as possible, as a separate unit. It maintains its own files and includes its own stenographic and clerical workers. In other cases all clerical work is drawn into centralized service departments. The best practice lies somewhere between these two extremes. There should be a separate department to handle the bulk of the **stenographic work,** including all routine correspondence, sales promotion letters, circular letters, etc. This leaves in the departments stenographic work of a secretarial nature only, or that for which a technical knowledge of some feature of the business is required.

Likewise there should be a **filing department,** into which should be gathered all material to be filed, with a few exceptions, such as the matter that will be put into the private files of the executive officers—catalogue and quotation files in the purchasing department, prospect files in the sales department, etc.

FORM 1. Departmental Division of Office

DEVELOPMENT OF THE ORGANIZATION PLAN.—This problem is usually encountered where an organization already exists which, due to growth or expansion, is no longer able to function efficiently in its present form. In such cases, the first step is to secure a detailed analysis of work to be done. For that purpose a report is obtained, on a form similar to Form 2, from each employee.

A thorough study and classification of these reports will bring to light any duplication of effort or other waste motion, and, the things that need to to be done, having been decided, the next step is to assign these duties.

At this point it is well to construct **departmental organization charts** (see Form 3). Every desk in the department should be represented on this chart and designated by a number or a combination of numbers and letters. One method that has worked out satisfactorily is to divide each department into sections, use a letter to designate the department, a number for each section and a number for each desk within the section. Thus a certain position in Section 2 of Department A is known as A-2-14 and that number is attached to the desk and is used in the office manual in referring to that position.

This facilitates assignment of duties to the different workers. In attaching duties to the various positions the functional idea must be kept in mind. The best results will be obtained when the number of functions connected with each position is kept down to the minimum. When responsibility for work performed by others is assigned to a position, there must be a corresponding delegation of authority. The lines of authority should be so well defined that every member of the organization knows what he is responsible for and to whom.

Please answer all of the following inquiries and return the blank as soon as possible to ....

....

1. Name ....
2. Title or Position ....
3. What is your principal duty? (Describe fully, using extra sheet if necessary.)

....

....

4. What forms do you handle in above work and from whom do you receive them and to whom do you pass them? ....

....

....

5. How much of your time is occupied in the above work? ....

....

....

6. What suggestions have you for shortening the time or increasing the value of your work? (State fully, using extra sheet if necessary.) ....

....

....

7. Who consults your records of above work and how often? ....

....

....

8. Describe separately but briefly every other task you do, giving form numbers of records you keep or blanks handled. Designate as daily, weekly or monthly.

....

....

9. Who consults these records and how often? ....

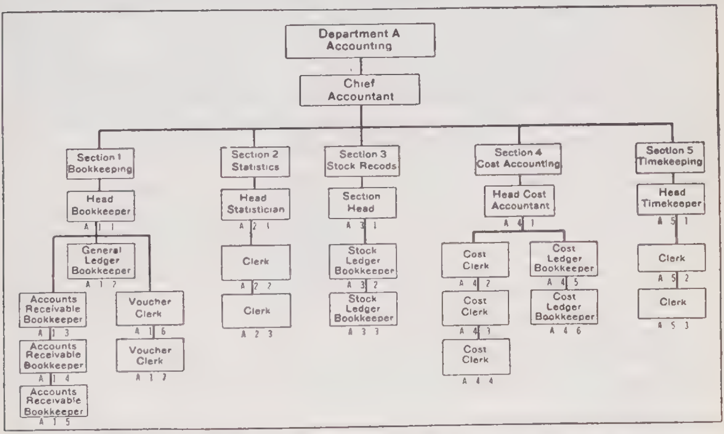
....

10. To whom are you directly responsible? ....

Form 2. Job Analysis Questionnaire

Things to be done by each department or unit of office organization should be studied systematically and manner in which they are to be done should be carefully worked out before attempt is made to put new arrangements into effect. Plans must take into consideration that performance of duties assigned to one department may depend upon receipt of certain information from other departments. Systems must be developed to govern handling of work in each department and transfer or movement of information, forms, and papers from one department to another, so that methods of handling matters in one department harmonize with plans of other departments through which the same matters pass.

In preparing plans or systems to co-ordinate the work and methods of the various departments, **routing charts,** similar to Form 4, for each of the principal forms, showing order of movement from place to place and duties of each department in connection therewith, help to prevent important



FORM 3. Organization Chart of Accounting Department

matters being overlooked and make it less difficult to arrange for the smooth progress of work through the office.

If radical changes in present methods are planned, care must be used to avoid serious disturbance to the routine work of office at the time changes are put into effect. Standard practice instructions thoroughly explaining the new methods should be distributed some time in advance. New forms should be studied and their uses understood by the clerks who are to handle them. Some confusion is practically unavoidable but careful preparation insures that most contingencies will be provided for.

LOCATION OF OFFICE.—Some of the things to be considered in deciding on the location of an office are referred to briefly in the following paragraphs. It is not to be expected that a place ideal in every respect will be found. The best that can be done is to choose the location having the greatest number of desirable attributes.

Accessibility.—Is it convenient to railway stations so that out-of-town customers and salesmen will not find it difficult to make visits? Are street

railway lines nearby and is the service adequate, enabling customers and employees to reach the office without undue fatigue?

Proximity to banks, post-office, office supply, and equipment houses. These all offer services that can be more efficiently taken advantage of if located nearby.

Reputation of building, of tenants, and of the neighborhood. Buildings as well as individuals are of good and bad repute. Appearance of the building and surroundings. Effect that the address may have in attracting or deterring trade; in enhancing or detracting from the reputation of the business. Strangers in forming an opinion of the business are, to some extent, influenced by these considerations and the quality of available office help is materially affected thereby.

In choosing the building, due attention should be given such matters as: **elevator service,** which should be continuous and able to handle passengers at all times without loss of time; **sanitary system,** which should include rest-rooms for girls; **heat,** since efficient results cannot be obtained in a poorly heated office; **janitor service,** etc.

The floor selected should be high enough to be free from dust and street noises and, if possible, above adjacent buildings. The **best floors** for office purposes are those from the 6th to the 12th. With up-to-date elevator service it is better to go above the 12th rather than below the 6th floor. If less than one floor is occupied, **choice of exposure** is usually made in the following order: east, north, south, west.

Provision for future expansion can be made either by taking options on additional rooms or by renting enough space to take care of estimated ultimate requirements and subletting that portion not needed for current operations. If latter plan is contemplated the lease should be examined carefully for clauses referring to subleases. If it is a large organization, requiring many floors, in subletting space held for future requirements, care should be exercised in laying out departments so that sublet space does not separate allied or growing departments.

Dining facilities in the neighborhood should be considered. If proper restaurants do not exist it may be necessary to establish a cafeteria or other form of lunchroom.

PLANNING THE OFFICE LAYOUT.—Arrangement of departments and of desks within departments should be such that the flow of work is continuously forward. The **straight-line method** advocated by factory engineers should be adhered to as closely as possible.

Wide separation of departments between which frequent communication is necessary should be avoided. Thus, if work of credit department requires frequent reference to customers ledgers, credit and bookeeping departments should, if possible, be placed side by side.

An important percentage of office routine is closely connected with the **shipping order,** which in a large measure governs the stream of work and all doubling back or zigzagging in the course of an order through the office should be reduced to the minimum.

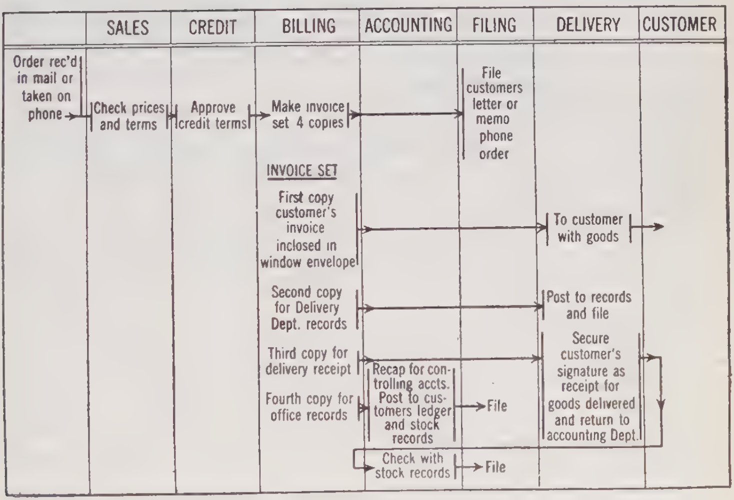
Roughly, 100 sq. ft. of floor space is required for each member of office force. This includes provision for files and other ordinary equipment. The amount of space used per employee varies considerably and is apt to be more than 100 sq. ft., rather than less. A standard desk 36 x 60 with a chair actually occupies 36 sq. ft.

Aisles and spaces between desks should be at least 3 ft. wide; 3½ ft. is better. A space 5 ft. wide is required in front of filing cabinets so that there may be

room to pass when drawers are fully extended. One large firm in New York City has had a special side file built which saves aisle space.

Unless rent is very high it does not pay to sacrifice an orderly arrangement to effect a small saving in floor space. A slovenly arrangement of equipment reacts on workers and makes it difficult to maintain the spirit of orderliness necessary to smooth functioning of the office machine. Desks should be placed in straight rows. Bulky pieces of equipment that rise above level of desks should, if possible, be located in corners or along walls so that the view from one end of the room to the other may be unobstructed.

Private offices should be provided only for executives who hold conferences which require privacy or whose work is such that they must be protected from noise and confusion present, in some degree, in even the best managed offices. These offices are extravagant of space, occupying of



Form 4. Routing Chart

necessity the better lighted parts of the room, and, even when made with glass partitions, cut off a large amount of light from the rest of the office.

A successful and frequently used **method of locating departments and desks** involves the use of a chart or map of the office, drawn to scale, on which cards cut to scale to represent desks are secured with tacks. Cards of different colors are used to distinguish different departments. Proposed private offices or partitions are indicated by strings attached to tacks. The movement of the more important forms may also be plotted on this chart. This aids in visualizing the layout and permits experimental arranging and rearranging until the best result is obtained.

Routing charts are also helpful in working out this problem. Form 4 illustrates a simple form of route or flow chart. On it the course of a shipping order can be traced from the time it enters office until transaction is completed by delivery of goods and invoice and filing of the delivery receipt.

A large bank in New York City had a miniature structure built with portable floors. These floors were made of material on which the layouts could be marked. The advantage of this was in seeing at a glance how the floors would look laid out, the departments above or below other departments, etc. The advantage of this is seen in moving. For instance, if your cut-out is a desk and is set on your chart and numbered 6, and is to go on 3rd floor of the new space, the floor of the space is given a number to correspond with the number on the cut-out. For instance, if cut-out is marked 6-3, it is the 6th position on the 3rd floor. The moving men examine the piece of furniture, and as the tag is marked 6-3 take it to the 3rd floor and look for the No. 6 position on the floor and place it there. Different colored tags for the different floors are also helpful in moving.

OFFICE FURNITURE.—Standardization of color, material and design of desks, chairs and filing cabinets, which are the principal items of office furniture, will do much for the appearance and condition of the office. Material and workmanship should be of the best. Cheap furniture is a poor investment. The additional cost of good furniture that will last a lifetime is not great and is money well spent.

Color and material of desks are to some extent questions of individual preference. For some types of offices, dark finish, such as mahogany, is preferred, but for the average commercial enterprise, oak desks with natural light finish are best. Good working light is easier to secure in offices equipped with light colored furniture than where dark finish is used.

Metal desks are favored by some office managers, but wood still holds first place as desk material and is in many respects superior to metal. The claim that metal for this purpose is a better protection from fire has not been proven. Some firms have found metal desks with battleship linoleum tops practical equipment.

Desks are work benches at which the office work is done. They should be considered as tools. Different kinds of work require different desk equipment and a careful study of the needs of each position in the office should be made before desks are purchased. Where books or other bulky records are handled or where baskets for incoming and outgoing mail, dictating machines, etc., must be placed on desks, a satisfactory size is 36 x 60 in. In other departments 48-inch desks may give as good results with considerable saving of space.

The more progressive furniture houses have done a great deal to develop efficient desks with specialized drawers and other features adapted for different purposes, and are prepared to furnish, from stock designs, desks to fill almost any requirement. **For bookkeepers** who handle large books, desks are made with tops sloping toward the front. **Tub desks,** either upright or sitting styles, may be had for card records. Available styles of **typewriter desks** include single-pedestal (32 x 38 in.), which is desirable where space is limited; double-pedestal (35 x 54 in.), which provides more desk surface and storage space; combination clerical and typewriter desks and many others.

Reliable data on the styles of desks, and arrangement of drawer space, best suited for different kinds of work, can be had for the asking from reponsible dealers in office equipment.

Desks selected should provide no more **drawer space** than is actually needed for the work to be done. Drawers should be fitted out with whatever filing or other time-saving devices will add to the effectiveness of desks as tools for performance of office work. Arrangement of supplies, forms,

etc., in drawers should be standardized as much as possible and periodical checks made to see that standards are being maintained. For example, one drawer may be used for employees' personal belongings; one for unfinished work; one for pencils, pens, scratch pads, rubber bands, clips, envelopes, etc., contained in trays and compartments; and one for the office manual, special instructions, etc. Where a large number of forms are used, additional drawers are provided. If left to their own devices, employees are apt to fill their desks with "junk" and to bury therein matters that should be attended to and passed on.

Some firms have desks with only room for working materials, such as pencils, pens, etc. This lack of drawer space prevents clerks from holding papers out overnight, and expedites work, as papers must go forward in order not to be left out. Where papers must be held over, a safe-cabinet is generally provided.

Chairs should be of the revolving kind to accommodate changes of position without moving the chair. Upholstered chairs are not suitable for office use. Chair backs should be made of spindles to allow ventilation. Wooden saddle seats are most practical and most commonly used. Seats of cane or of perforated leather are better from the standpoint of appearance and ventilation but on account of their poor wearing qualities are not generally used. Special chairs having adjustable spring backs are usually furnished for stenographers and typists.

Filing cabinets should also be standardized so they can be transferred from department to department or used for various purposes as need arises. Files are made in certain well-established sizes and, by cutting card records and forms that are filed in cabinets to conform to these regular sizes, delay and extra expense of having special equipment built is avoided.

In color and appearance filing cabinets should harmonize with desks. High-grade construction is of first importance. Drawers should be interchangeable. Correspondence files and other files larger than 5 x 8 in. or more than 16 inches deep should be equipped with roller bearings and extension slides. Drawers of a well-constructed correspondence file operate as easily with a full load of 60 to 75 lbs. as when empty.

For filing cabinets, **metal** is usually preferred to **wood** because of the saving in space, and in this connection the number of inches of space actually available for filing should be considered rather than the size of the cabinets. If it is not necessary to allow for expansion, solid cases may be used, but as it is seldom possible to definitely predetermine the amount of filing space that will be required, it is usually best to use sectional cabinets.

Correspondence and legal-sized files should not be more than four drawers high. The top drawer of a five-drawer file is too high for the average file clerk to use without standing on a stool, which slows up the work.

MECHANICAL EQUIPMENT.—Use of **machinery** in offices to do work formerly done by hand is now so general that little need be said regarding the desirability of installing machines to take place of handwork wherever possible. Mechanical devices for saving labor, improving records, and speeding up routine office work are on the market in almost unlimited variety. A few of the more important are referred to briefly in the following.

Adding machines and **calculating machines** take much of the drudgery out of the accounting department. If lists are required for record or checking purposes, **listing machines** make printed lists of amounts added. Certain types of these machines are arranged to print identifying numbers opposite amounts listed for addition. Where lists are not needed, greater

speed can be obtained with non-listing machines. These non-listing machines are also used for multiplying and dividing, making extensions, figuring unit costs, etc., and for work that is a combination of adding, multiplying, and dividing are probably the best. They are light and compact, can be placed on desks and readily moved from place to place. See section on "Office Appliances." For straight multiplication and division, calculating machines are recommended.

Bookkeeping machines are coming into quite general use. Well-known makes are Elliott-Fisher, Underwood, and Burroughs. The style of machine that makes use of a **flat bed** instead of the ordinary typewriter **platen** is in some respects to be preferred. The latter requires a ledger card of lighter weight which, after passing around the roller a number of times, does not stand up as well in the tray and cannot be handled as rapidly as the heavier cards used with flatbed machine. Another desirable feature of the flatbed style of machine is the production of proof sheets that can be used to take the place of separately written journals. The style of machine best suited to the work in hand can be determined by the demonstrations which the manufacturers will give at their own expense.

The principal advantage of bookkeeping machines is not in speed of posting which seldom exceeds and in some cases does not equal that attained by hand, but in the fact that the accuracy of each day's posting is proved when completed and that statements of customers' accounts are prepared as the posting is done so that at the end of the month no time is lost in checking for balances and writing statements.

Machines used for billing vary from ordinary typewriters to elaborate electrically driven contrivances, such as Moon-Hopkins and Remington-Wahl, that make mechanically all computations incident to invoicing. On work that they can handle, these combination calculating and billing machines effect an important saving by eliminating one operation of extension but they do not always give satisfaction on very complicated invoicing. The speed claimed for them by the manufacturers is usually based on ideal conditions and must be discounted considerably for ordinary jobs.

One of the newer devices for speeding up billing is the "Fanfold." It is an attachment for an ordinary billing machine and takes its name from the ingenious method of handling papers and carbons. The entire invoice set, including record sheets, is printed in long strips which are folded like a closed fan. Carbons are fed from rolls and require no handling, being renewed by shifting a lever. When an invoice is completed it is torn off, leaving the next set of papers in position ready for typing. Saving of time usually lost in handling carbons and securing proper alignment of papers in the machine results in considerable increase of output.

Tabulating machines, of which there are two on the market, Hollerith and Powers, are practically indispensable where statistical information in considerable volume is required. With these machines, it is possible to compile, at small expense, many useful statistics, cost of which would be prohibitive if otherwise prepared. These outfits consist of three machines, **card punch, sorter,** and **tabulator.** The information to be classified is keyed numerically. Corresponding numbers are punched in specially prepared cards. After the cards have been punched, the sorting and tabulating machines, operated electrically, take off totals under any desired heads.

A **duplicating machine** of some kind should be included in the equipment of practically every office, however small. These machines may be divided into three groups: **gelatine, stencil,** and **typesetting.** The gelatine machines

are especially useful for reports and interdepartmental circulars where not more than about 35 copies are required and for making copies of orders where the papers needed for factory and office records, bills of lading, etc., are too numerous to be made with carbons.

For circular letters and other matter requiring more copies, stencil and typesetting machines turn out very good work at a low cost. Where the appearance of the work is important and a close imitation of typewriting is desired, typesetting machines give best results. Appearance of work done on stencil machines is not as neat and does not resemble typewriting as closely but a stencil can be made in less time than is required to set up type and, if carefully filed, can be used repeatedly, while type must be knocked down after each job has been run off.

Electric typewriters that operate by use of perforated paper rolls on the same principle as player pianos are preferred for some kinds of circularizing, for the reason that they permit the insertion, at any desired points, of special paragraphs, names, dates, or other references, thus giving a touch of individuality to the letters.

If the volume of mail is at all large, machines for **opening letters** and for **sealing and stamping envelopes** should be installed. These machines are made in various styles to meet requirements of either large or small offices. Small, hand-operated machines either seal or stamp approximately 3,000 envelopes per hour, while larger machines operated by electricity count, seal, and stamp from 7,000 to 15,000 per hour.

Addressing machines are used extensively where circularizing is done from lists that are more or less permanent, also for pay-rolls, pay envelopes, time cards, etc.

Office managers should subscribe to **periodicals** having to do with office equipment; they should keep office equipment catalogues up to date, and membership in organizations dealing with office management should be maintained in order to keep in touch with all phases of office practice.

LIGHT AND VENTILATION.—Good natural light is better than any artificial illumination. **Lighting systems** are direct, semidirect, or indirect. **Direct lighting systems** throw the light directly from the lamp to the working surface. In **indirect systems,** the lamps are concealed from view by opaque hemispheres that throw the light against walls and ceilings from which it is reflected into the room. In the case of **semidirect lighting,** the hemispheres permit part of the light to pass through, the remainder being reflected from the walls and ceilings.

Either indirect or semidirect are better than direct systems. Indirect lighting is usually considered best, but as it requires much more current than semidirect systems, the latter are more frequently used. **Wattage** required to properly light a given area depends upon distance lights and reflecting surfaces are from working surfaces and amount of light that passes directly through the bowls or hemispheres of lighting fixtures. Most electric light companies are able and willing to supply data regarding equipment needed. Proper color for ceilings and walls and light-colored furniture improve working light. Light yellow is usually recommended for ceilings and upper parts of walls, a somewhat darker shade being used for the lower part of walls. If possible, use of **individual desk lights** should be avoided.

Without a plentiful supply of **fresh air,** it is impossible for an office force to do its best work. Drafts are as bad as insufficient circulation. Where, on account of outside noises or dust, it is impracticable to open windows, where partitions prevent proper circulation, or where, for any reason, ade-

quate supply of fresh air cannot otherwise be obtained, mechanical ventilating systems should be installed.

Light and **ventilation** materially affect office output and should be thoroughly studied by office managers Where unsatisfactory conditions are found, competent engineers should be employed to recommend changes of equipment.

HANDLING OF MAIL.—Incoming mail must be opened, sorted, and distributed. Outgoing mail must be collected, enclosed, sealed, stamped, and delivered to the post-office.

If desks are cleaned up each day as they should be, the day's work cannot be started satisfactorily until the morning mail has been distributed. Signing of outgoing letters will be continued up to the closing hour. To meet these conditions, the **mail department staff** should be divided into **two shifts.** The first shift should be at work at least an hour before the regular opening time and should have the first distribution completed when the office force arrives. The second shift remains on the job until all outgoing mail has been dispatched. Hours of work can be equalized by adjusting quitting time of the first shift and starting time of the second to harmonize with the irregular time of opening and closing necessary in this department. To handle the **peak load** occurring morning and evening, extra clerks may be drawn from the other departments for a short time and returned to their regular work when the rush hour has passed. In many offices mailing and filing departments are combined, which takes care of this feature satisfactorily.

It is usually better to send to the post-office in the morning for the first batch of mail rather than depend upon the mail carrier for delivery.

Opening and sorting mail involves handling a large number of pieces and unless the work is reduced to an orderly routine, a great deal of time will be lost. This department offers an especially good field for time and motion studies. Each operation should be analyzed and a systematic plan of procedure developed.

The following outline indicates in a general way methods used in an office receiving from 1,000 to 2,000 letters daily. Systems vary, of course, with the quantity and kind of mail received. For example, if numerous cash remittances are received with orders, the plan for handling that feature will have to be elaborated. Other variations are necessary to meet varying conditions of different offices.

Distinctive envelopes should be used for branch office and salesmen's letters, and such letters should always indicate the department for which they are intended. These letters should first be sorted out, opened, time-stamped, and delivered without reading. **Personals** must also be eliminated and either delivered or readdressed to employees' homes, depending upon the policy of the house.

As envelopes come from the opening machine, cut along one side, each clerk takes about 20; arranges them in a stack, face up; rips one end of envelopes with a paper knife to facilitate removal of contents; withdraws letters; and discards envelopes if writer's address is given in letters, otherwise envelopes are pinned to letters. When stack has all been opened, letters are time-stamped, enclosures are noted and attached; letters received with cash remittances are sent to the cashier with remittances attached. It is not good practice to send letters with remittances to another department without getting in return some form of receipt, as later the department might claim it has never received a certain remittance, and the mail-

room has no way of showing that it was received by the department to which it was sent. A good method is to list these remittance letters, showing the date received, amount, form of remittance (whether money order, check, or cash), and have the whole signed by the person receiving the mail. Other letters are passed to the reader who indicates the departments to which they are to be sent and passes them on to the sorting table where they are placed in appropriate compartments of the classification rack and delivered at regular intervals.

The **mail reader** should be familiar with the activities of the different departments and should have a list of departments and persons to whom mail is to be sent, with a concise description of the kind of mail handled by each. The departments should be given a number so that the whole name of the department does not have to be written across a piece of mail, particularly a small piece. Each marker should have different colored crayons so that wrong marking can be traced.

Assembling racks for outgoing mail should contain divisions for branch offices, salesmen, and active correspondents. By accumulating mail in this rack during the day and one large envelope for each address, a considerable saving of envelopes and postage is effected. Use of **distinctive letterheads** for branch office and salesmen's correspondence simplifies the work of classification.

There should be a system of re-reading, to insure mail being correctly sent out.

Stamping and sealing should be done mechanically. Folding machines are used where the volume of mail is very large but this is an operation that can be performed very rapidly by hand. The speed of folding and enclosing by hand varies from 200 per hour using ordinary envelopes, to 500 or more per hour where window envelopes are used and it is not necessary to compare addresses.

Window envelopes are usually considered unsatisfactory for general correspondence. They should be used for invoices and statements and for some kinds of circular letters, such as quotations sent regularly to jobbers and dealers where the appearance of envelopes and irregular folding of enclosures does not detract from the effectiveness of the communications.

A **time table** of departing mail trains should be posted in this department and arrangements made to get mail to the post-office in time to make proper connections. If necessary, important letters should be sent to the post-office by special messenger.

Weighing scales and **schedules of postage and parcel post rates** should be provided and the head of the department held responsible for economical use of postage.

Handling of **telegrams** should be assigned to a responsible clerk who should time-stamp and deliver them personally to the individuals for whom they are intended or in their absence to persons attending to their duties.

INTERDEPARTMENTAL COMMUNICATION.—Information and instructions passed between departments should be put in writing. Verbal instructions are a fruitful source of misunderstanding. A special form should be provided for **pencil memoranda** and used instead of miscellaneous pieces of scratch paper in cases where formal typewritten letters are not necessary.

An efficient **messenger service** should be insisted upon. This should include a regular schedule of collections and deliveries and special messengers for urgent matters that cannot wait for the regular service. In large offices, **basket carriers** and **pneumatic tubes** can be used to advantage.

Regularity is essential. Messengers' trips should be governed by a definite time table, carefully worked out and rigidly adhered to, so that the time required in transit from one point to another can be known and depended upon. Frequency of trips must be arranged to suit individual requirements of different offices and may vary from one to four per hour. **Buzzers** for calling special messengers should be provided where their use can be justified. If the regular service is all that it should be, the need for special messengers will usually be very limited. When the boy makes his last call a red card or some other symbol should be used to indicate that the boy has made his last call; otherwise important mail might lay there until the morning.

It should seldom be necessary for employees to leave their desks to secure or deliver papers. Employees should be encouraged to use telephones and office mail instead of making personal trips. An office in which clerks are continually moving about is not working at its highest efficiency.

Desks should be equipped with **baskets** having compartments for incoming and for outgoing mail and, if necessary, third compartments for papers to be returned to the files. Mail bags or other carrying devices used by messengers should have corresponding compartments to facilitate sorting. Special envelopes should be provided for enclosing important and confidential papers. At convenient points, sorting stations should be established, at which messengers can have use of desks or tables for arranging material for delivery on their routes or for forwarding to other parts of the office.

Messengers are usually youthful and inclined to be irresponsible. They should be in charge of a **head office boy** or mailing department head. Close supervision is necessary to secure maintenance of schedules and to prevent delay at sorting stations and carrier terminals.

Telephones should be installed wherever needed. Where only a few employees need to make outside calls, **interior systems** are used with switchboard connections only for those who need exterior phones. If a great many outside calls are made, all office phones should be connected with the switchboard. Advantages of interior telephones are that connections are made without assistance from the switchboard operator, leaving her free to devote her entire attention to outside calls; exterior phones are not busy with office matters when important outside calls are received; and control of the practice of making personal calls is simplified.

Telautographs are electrically operated mechanisms for transmitting autographic records. Words written at one point are reproduced instantaneously on one or more receiving machines located in other departments or in other buildings. They are useful for interdepartmental messages, for announcing visitors, etc.

FILING.—While some authorities advocate absolute **centralization** of the filing function, it is doubtful if that ideal has ever been attained in any but very small businesses. There are certain kinds of records, of interest only to departments in which they originate, that are usually kept separate from the central files. For example, the credit file, containing reports and other credit information, is usually maintained by the credit department; employees' personal record files are kept in the employment department, etc.

The rule should be that the filing department is to handle all material to be filed, exceptions being made only where it can be demonstrated that better results will be obtained by allowing other departments to have control of certain special files.

To establish a **central filing department,** it is not necessary that all rec-

ords be assembled in one place, but that they be under the control of one central authority. Files in charge of an experienced and competent file clerk can be kept in better order and at much less expense than departmental files operated by comparatively inexperienced and unsupervised employees. A well-trained file clerk will, in a given time, handle nearly twice as many papers as a person who has not had specialized training in this work.

Another argument in favor of centralized filing departments is that all papers pertaining to a correspondent or subject are brought together in one place where they are available for use by any member of the organization, whereas with departmental files, locating a particular paper may be a difficult matter requiring search in several departments.

The success of the filing department depends upon its ability to produce promptly any desired paper or record. This is possible only if the papers or records are turned over to the filing department as soon as they are ready to be filed and not held in desk drawers or baskets. The head of this department should have authority to demand material that properly belongs in the files.

It is also necessary that the filing department, having obtained possession of material, store it in such a way that it can be instantly located, and maintain control of it by keeping a record of all withdrawals. The record to be kept depends somewhat on existing conditions. In some cases "out cards," on which are noted name of persons taking papers and dates of removal, are sufficient. In other cases and for important papers, it may be advisable to use cards or slips printed as receipts to be signed by persons receiving papers.

Nothing should be taken from files by others than members of the filing department, excepting that if papers are needed outside of office hours, when no representative of the filing department is present, they may be taken. In such cases a record of papers taken should be turned over to the head of the filing department as soon as practicable. Under no circumstances should papers be returned to files by persons not employed in the filing department.

To reduce as much as possible the inconvenience of not having all files of a department immediately at hand and to overcome the tendency of employees, especially executives, to hold on their desks, material that they expect to need in the near future but which should meanwhile be placed in the files, a regular and dependable **system of communication** must be maintained. Whether this is operated entirely by messengers or partly by mechanical carriers depends upon conditions. The important point is to promote confidence in the certainty of prompt service. With this feature working properly, it will soon become apparent to all concerned that it is easier to depend upon the filing department than to hold papers even for a short time. It is important to select a folder of lasting quality, as it will mean a great outlay of expense sometime in the future if a paper is used which will dry and crumble with age.

Location of this department should be such that the least possible time in transit is required for papers sent to any point in the office. Importance of prompt service cannot be overemphasized. Time lost waiting for papers from files is usually that of higher paid employees and executives.

Cabinets should be placed on 3 or $3\frac{1}{2}$ sides of a rectangular space, with file clerks' desks, sorting trays, etc., in the center.

This department should be in charge of a person who has made a study of filing systems and who thoroughly understands the work. Girls are more

successful as file clerks than men, being naturally better adapted for the patient concentration on routine necessary to accurate filing.

FILING SYSTEMS.—In recent years, filing methods, designed to increase accuracy and save labor, have been developed in considerable variety. For the purposes of ordinary businesses they may be considered under six heads as follows:

1. **Alphabetic,** which places papers in dictionary arrangement behind guides tabbed with subdivisions of the alphabet.
2. **Numeric,** which assigns to each correspondent or subject a number that is recorded in an alphabetic index, papers being stored in numeric sequence.
3. **Alphabetic-numeric,** a system intended to combine the easy filing of numeric with the quick finding incident to alphabetic methods.
4. **Geographic,** which divides the file into sections territorially with divisions and subdivisions for states, sales territories, towns, etc. Arrangement of divisions and of matter within divisions is usually alphabetic.
5. **Chronologic,** or arrangements by dates. Seldom used except for tickler files.
6. **Subject,** which classifies material by subjects instead of by correspondents' names. Arrangement may be either alphabetic or numeric.

As different kinds of material require different filing methods, the first step in **organizing a filing department** is a careful survey to determine, first, what is to be filed and, second, how it will be asked for—by what name or title, by whom, and how frequently. It is also necessary to decide what is to be put in the general files and what special files are needed. The amount of material to be handled should be estimated and provision made for future expansion.

An examination of papers and records in the current files and records of quantities handled during a short period helps to furnish answers to these questions.

Guides and **folders** should be selected carefully. Valuable information regarding styles best suited for the work in hand can be obtained by studying filing equipment catalogues.

The **alphabetic method** should be used as much as possible. It is simplest and easiest to operate; requires no separate index; involves no decisions as to subjects; and for general correspondence and many other matters, gives as satisfactory results as more complicated and expensive systems.

Vouchers, contracts, orders, etc., are usually filed **numerically** and that method may be suited for correspondence in some cases where numerous cross-references are necessary.

Geographic division of files is useful for certain card records such as sales statistics and for correspondence with branch offices, jobbers, and salesmen.

Every office should have a tickler system, located in the central filing department. This is a section of the files equipped with guides for months and 31 numbered guides for the days of the current month. Papers that should be referred to and memoranda that should have attention on a certain date are sent to the file, marked to indicate the dates on which their return is desired. These papers are filed under dates indicated and each morning those requiring attention that day are distributed. This system

helps to keep desks cleared and to prevent important matters being overlooked.

Subject filing, in business offices, is usually confined to information or data files. The value of files of this kind is not generally appreciated. By accumulating valuable papers referring to the current history of the enterprise, clippings from trade papers, books and pamphlets, etc., on subjects connected with the business, it is possible to develop a reference library that can be of inestimable value in working out the new problems that are constantly being met.

Numeric arrangement is best for this file and, in order to keep related subjects together in the file, primary, secondary, and tertiary divisions are required. This is known as the **decimal system** of numbering. Numbers for divisions are built up on the same principle as account numbers for a ledger classification.

The following, taken from "Office Administration" by J. William Schulze, illustrates the method of numbering as well as the form of classification that a "data" file may take:

10. ADMINISTRATION
    Minutes of executives' meetings, large general reports and plans, relations with employees, etc.
20. PRODUCTION
    Specification of goods, patents, studies of machinery, tests of quality.
30. SELLING
    Sales plans and dates of all kinds, new markets, salesman's management.
40. ADVERTISING
    Plans, campaigns, results, testimonials, suggested copy, mediums to be used.
50. FILES of all publications and printed matter of the firm
60. FINANCE AND ACCOUNTING
90. COMPETITIVE GOODS
    All available information on competitors and their output.

Main numbers 70 and 80 have not yet been needed and are left vacant.

The subdivisions of the **sales division** are shown below:

30. Sales in General
    30. 1 Sales policies, plans, and important memos
    30. 2 Retail vs. jobbing business (including retail extension)
    30. 3 Price schedules
        (Established schedules, discussions of and actual schedules. A copy of any changes must be sent to these files. Includes also repair price schedules.)
31. Sales Department, Organization, System, and Equipment
    31. 1 Charts and functions
    31. 2 Minutes of sales department conferences
    31. 3 Salesmen's report card system
32. Marketing Plans and Special Campaigns
    32. 1 Special contracts (for sale of goods)
    32. 2 Special campaigns
        (All special campaigns, including descriptions, data and copies of all advertisements used in connection with them.)
    32. 3 Export development
    32. 4 Scheme development
33. Salesmen's Management
    33. 1 Employing and training salesmen
    33. 11 Qualifications and selection

33. 12 Preliminary training
33. 13 Sales conventions
33. 14 Special reading courses and study
33. 18 Compensation
33. 2 Formulation of house policy for salesmen
33. 3 Sales supervision

TRANSFERRING.—Current files should be cleared at regular intervals by transferring their contents to storage files. Correspondence, orders, and legal documents are usually kept in current files 6 months or 1 year, in semi-active files until the end of the 2nd year and in storage until the time for bringing suits, as governed by the statute of limitations, has expired. Orders and paid invoices are destroyed after 2 or 3 years. Interdepartmental memoranda have little value after 1 year. Other files such as credit records and data files are being constantly renewed and are, of course, kept indefinitely.

BUSINESS CORRESPONDENCE.—The modern business enterprise maintains its outside contacts, largely, by means of written communications. The esteem in which it is held by its customers and its business contemporaries is, to a considerable extent, dependent upon the quality of the letters it writes.

There are many difficulties in the way of securing uniformly high standards for correspondence. They cannot be maintained in an office in which there is no active supervision of the correspondence function, and anyone whose work requires correspondence is allowed to dictate letters.

Managers who recognize the value of well-written letters and who realize that some specialization is necessary if letters written on company letterheads are to fairly represent standards and ideals of the house, usually either establish correspondence departments to handle all office correspondence or assign the duty of writing letters to one or more persons in each department.

A **central correspondence department** having a staff of trained correspondents in charge of an expert insures an output of letters, satisfactory in composition and mechanical makeup, but this department is seriously handicapped by the fact that it must gather its information from departments in which transactions originate and that it cannot have an intimate knowledge of the details of all matters regarding which letters are written, with the result that letters, perfect from an artistic standpoint, may be inaccurate and incomplete.

This department has the advantage of the broad viewpoint of the whole business rather than the narrow departmental viewpoint. It will handle matters impartially without making unwarranted attempts to defend the action of another department, but a great deal of time is spent investigating matters already clear to someone in another department who could write the letter in less time than is required to make the situation clear to correspondents. Complete separation of a department from responsibility of handling its correspondence results in a lack of understanding and appreciation by the department of some features of its work.

Centralized correspondence departments are suitable for some offices but in most cases the plan of having correspondents in each department gives better results if departmental correspondents are carefully chosen, thoroughly trained, and properly supervised. They should be responsible to their department head for proper performance of their duties and, in a general way, under the direction of the correspondence supervisor who assists department heads by training correspondents and handling difficult corre-

spondence problems and who is responsible for keeping the quality of the correspondence up to standards set by the house.

Ability to write good business letters may, in some cases, be natural but it is more often acquired. When vacancies occur, it is not always possible to find applicants having the necessary experience and training, and if the work is not to suffer, some form of instruction must be provided. Department heads have so many other things to attend to that they are not able to give a great deal of time to this problem. They are apt to assume that, so long as no complaints are received, their correspondence is being handled in a satisfactory manner. Many department heads are themselves unable to write good letters and do not appreciate the importance of this subject.

The correspondence supervisor, devoting all of his time to this matter, is in a much better position than department heads to formulate a correspondence policy and to give training necessary to have it carried out. He should receive copies of all or some of the letters written, criticize the work of correspondents, and give instruction and advice where needed. He should also carry on a continuous campaign for better letters. This usually takes the form of bulletins, sent to departmental and branch office correspondents, containing correspondence problems to be worked out, comments on the work being done, suggestions for handling difficult situations, etc.

CORRESPONDENCE MANUAL.—Form letters and form paragraphs are used to cut down the cost of dictation. For some kinds of work, such as answering complaints and inquiries and handling collections, they give satisfactory results if used with discretion. These forms, being the result of careful study, are often better than personal dictation which is almost certain to become more or less mechanical and stereotyped where the same subjects are treated day after day. Paragraphs are more flexible than complete letters but skilful handling is necessary to avoid the appearance of patching. Several paragraphs from the manual may be combined or one or more incorporated with dictation to make up a complete letter.

The correspondence manual contains copies of all form letters and paragraphs in use, indexed for ready reference, and numbered so that dictators need only indicate numbers required. In cases where no dictation is necessary, letters are sent to the stenographic department with manual slips or marginal notes giving the necessary information.

Constant revision is necessary to keep the manual up to date. New developments will suggest methods of treatment. A customer who gets the same letter a number of times will not be favorably impressed. The correspondence manager has charge of the manual and suggestions for new letters to be included are submitted to him for approval. He sees that manual letters are used where appropriate and that they are not used by careless dictators in cases where personal dictation is required.

Modern business letters resemble telegrams in that they are concise treatments of single subjects in which there is no place for unnecessary words, stereotyped phrases, or rambling generalities; but efforts to be brief and to the point should not be carried so far as to give the impression of abruptness or lack of courtesy, nor should attempts to secure novelty and originality of expression be so forced as to result in the bizarre. Oddity and eccentricity are apt to be as fatal as the use of hackneyed and stereotyped expressions.

Elimination of conventional introduction and conclusion is not considered good form in external correspondence. They should be omitted from interdepartmental letters.

Mechanical forms of letters should follow standards that usage has prescribed as correct, as exemplified by the letters of leading merchants and bankers. **Letterheads** should be dignified and conservative. They may be printed, engraved, or lithographed. **Black on white paper** is usually best, although slight variations are sometimes permissible. Bright colors or more than one color should not be used. The head should occupy no more space than is needed for symmetrical arrangement; not more than 1/5th of the page. It should not contain illustrative pictures or advertisements, nor should it be continued all around the margins of the letters as a series of fancy designs or a list of articles manufactured or sold. Name, address, and business of the concern is all that is necessary. Names of members of the firm or of officers of the corporation, with telephone number and cable address, may be added. Nothing unessential should be included.

Typewriting done in black or blue-black makes the best appearance. The use of purple is sanctioned because of its usefulness in copying. Where letterheads are some other color than black, typewriter ribbons to match may be used.

Arrangement of date lines, salutations, paragraph indentations, etc., should be conventional and should be standardized so that letters have a uniform appearance.

For ordinary correspondence, **envelopes** should be standard size, about 6½ x 3½ in. The sender's return address should be placed in the upper left-hand corner. Like letterheads, envelopes should be free from any attempt to use them as advertising mediums.

STENOGRAPHIC WORK.—The greater part of the stenographic and typewriting work should be done in a central department. Centralization equalizes work, facilitates adoption of standards of quality and style, and makes possible inspection and supervision without which a uniformly high grade of work cannot be obtained.

The stenographic force can be adjusted to the amount of work to be done more readily in a central department than where this work is done throughout the various departments. The central department can better utilize spare time by duplicating form letters, etc., and by doing various related "fill-in jobs" that can be saved up for slack times.

Executives who handle work that is confidential, or who need the services of stenographers to assist them in other ways, should have individual stenographers. There may also be certain jobs of typing that can be better performed under the supervision of the department head for whom the work is done. These are merely exceptions to the rule that best results are obtained by drawing this activity into central departments.

Where the **stenographic method** is used—that is, dictation is given direct to stenographers who take it down in shorthand—correspondents, when they are ready to dictate, notify the head of the stenographic department who assigns stenographers to take their work. The head of the department should have a schedule, showing at all times the amount of unfinished work each stenographer has on hand, to avoid loading up some of them with more work than can be completed during the day.

The **phonographic system** is, in many ways, superior to the shorthand method. Correspondents dictate to machines that record their words on wax cylinders. When filled, cylinders are sent to the transcription department where they are placed on reproducing machines that operate at any speed desired by typists.

With this system, the time of one, instead of two, is used for dictation; none

of the correspondent's time is lost waiting for stenographers, and the necessity of preparing a number of letters before commencing dictation is eliminated as letters may be dictated from time to time during the day as the necessary information is obtained.

Correspondents who have become accustomed to the shorthand method sometimes object to using machines and for some kinds of dictation it is undoubtedly more difficult. Technical descriptions and special instructions are not so easily made clear to operators. In some cases the shorthand method may be preferred, but for ordinary routine correspondence, machines give entire satisfaction and save time for both dictators and typists.

Stenotypes are machines for taking down dictation by a system of letter combinations. They are more rapid and accurate than shorthand and have the added advantage that notes taken by one operator can be transcribed by another.

It is the duty of the stenographic department to turn out perfect letters. Careful dictation is as necessary as skilful transcription. The work should be governed by written rules, stating definitely what the operators are responsible for and what must be done by dictators.

Within the stenographic department a great deal can be done to increase and improve the output by proper arrangement of the work. Machines should be standardized so that operators can change readily from one machine to another. Different employees should, as much as possible, become specialists in the different features of the department's activities. Arrangement of stationery is an important matter. Racks having compartments for the different sizes and kinds of stationery used and with shelves sloping backward so that one sheet can be readily withdrawn at a time, and copyholders to keep material being copied in position to be easily read, help to speed up the work.

Selection and Training of Office Employees

IMPORTANCE OF CAREFUL SELECTION.—The cost of replacing an office employee is difficult to determine but it is probably conservative to estimate it as one month's salary for the position being filled. It includes not only cost of training and at least part of salary paid during time spent in training but also other less definite costs, caused by delays and errors due to unfamiliarity with the work, which disturb orderly procedure and may result in serious loss of good-will.

It is becoming the accepted practice to hire new employees only for the lower grades of work and to fill vacancies in more advanced grades by promotions. This plan, with occasional infusion of new blood in some of the higher positions, is undoubtedly the best. Time is required to gain the understanding of a business necessary for the intelligent performance of even the simplest tasks. An office force made up largely of workers who have grown up with the organization and who by long association have acquired an intimate knowledge of it, performs the maximum of accurate and intelligent work with the minimum of supervision.

This does not mean that an employee should be kept on the pay-roll after his unfitness has been demonstrated, merely because some time and money have been spent upon his training. Mistakes will of course be made and, when recognized, no time should be lost in eliminating incompetent or undesirable employees. They act as a drag on the efficient and loyal workers and slow up the whole organization. The question of salary should not be

given too much importance. Incompetents and malcontents are expensive at any price. The point to be emphasized is that the greatest care should be used in hiring junior clerks so that persons having the necessary qualifications are available for promotion when vacancies occur.

An office that has the reputation for maintaining high standards of character and ability for its employees attracts desirable applicants who are eager to become associated with a progressive organization.

SECURING APPLICATIONS.—Some applications are received from persons who write to or call at the office in search of employment, and in other cases contact with applicants is made through friends, business acquaintances, and employees; but ordinarily most applications are obtained through employment agencies or are received in response to newspaper or trade magazine advertisements.

If employment agencies, located in town or in nearby cities, are reliable and of a type to attract high-grade applicants, the employment manager can save time by making use of them. Agencies should be instructed as to general requirements and should recommend only persons who, after a preliminary examination, appear to be suitable. This relieves the employment manager of the work of weeding out the obviously unfit.

Objections to the use of employment agencies, sometimes heard, on the ground of expense to the employee, are not valid. The person seeking employment is a gainer if, by paying a reasonable fee, he can reduce materially the time required to find a job. Honestly and intelligently conducted employment agencies perform an efficient service. Such connections should be made with care and only after investigating, to some extent, the character of the management as well as methods used and the type of people attracted by the agencies in question.

If newspaper advertising is depended upon, some thought should be given to the wording of advertisements. An advertisement reading "Wanted: bookkeeper; salary $18" does not draw replies from as high-grade applicants as one designed to appeal somewhat to the imagination. A brief statement regarding policies of the house and opportunities for advancement and a request that details of qualifications be given in replies should usually be included. The editorial policy of the newspaper used should also be considered. Different papers are read by different classes of people.

If sufficient time is available, and it is desired to interview all applicants, the firm name may be given in advertisements. Otherwise, some of the best letters are selected and the writers requested to call for interviews.

METHODS OF SELECTION.—Before the process of selection can begin, it is necessary that the employment manager have a clear idea of the qualifications required. In a small office he is able to carry that information mentally, but in larger offices some form of record is necessary. The work done in the office should be analyzed and a record made of the qualifications necessary or desirable for each class. This record should contain a brief description of each kind of work, and the education, training, experience, etc., considered necessary for its proper performance should be listed in sufficient detail to give a good idea of the type of person needed.

In addition to this detailed list, the office manager or employment manager will formulate standards for general qualifications, applying to all employees. These standards, whether or not they are formally set down in writing, cover such matters as health, appearance, mental ability, education and general knowledge, ambition, loyalty, enthusiasm, reliability, energy, initiative, persistence, etc.

To find the right man for the right job is the work of the employment manager. He brings to this task whatever he has of knowledge and experience and usually a vast confidence in himself as a reader of character and a judge of ability. It cannot be denied that a skilful and experienced interviewer often does attain considerable success in choosing efficient employees, but it is generally admitted that the percentage of mistakes is distressingly high and that any system that seems likely to ower it is worthy of consideration.

To assist the employment manager in making selections, various systems of **classifying** the physical and mental characteristics of human beings and determining their fitness for certain kinds of work have been devised. Of the so-called scientific methods, the ones most widely known may be grouped under two heads: **character analysis** and **psychological tests.** The first as usually practiced is described as "character analysis of the observational method." It is based on the alleged principle that human bodies vary in certain definite ways and that variations of character follow, and may be interpreted from, the bodily variations. The accuracy and reliability of this method is not generally admitted by business men. It is expensive to conduct, requiring considerable time and the services of experts, and it is not considered practicable for the average business.

The second group, which depends upon psychological and mental alertness tests, seems to have a better claim to recognition, at least where a large number of applicants are to be examined, and it is impossible to give each a careful interview. Psychologists do not claim that these tests are infallible. They do claim that by their use it is possible to classify men and women into three broad groups, viz., those of superior intelligence, those of average intelligence, and those of inferior intelligence.

Many employment managers make some use of these tests, and while they are still in the experimental stage and absolute dependence should not be placed upon them, it is undoubtedly true that they are useful in grading applicants if properly used and if results are properly interpreted. This subject is one with which the employment manager should be familiar.

In addition to the general intelligence tests referred to above, it is possible, in many cases, to make concrete tests of the applicant's ability in the field for which he is being considered. Bookkeepers may be given problems that will bring out their knowledge of the subject. Correspondents may be asked to write letters based on certain stated conditions. Stenographers may be given dictation and their ability judged by comparing the speed and accuracy with which notes are written and transcribed with predetermined standards, etc. Comparative ability of different applicants can be judged more accurately if tests are so arranged that results can be reduced to definite ratings.

Application blanks are used in most large offices. They vary widely in form, being designed by each employment manager to draw out the information that he considers essential. The detail required on the application blank depends on methods used. If an interviewer's report is also secured and tests or examinations are conducted, the application blank need not be as elaborate as would otherwise be desirable. The application blank and record of interview shown in Forms 5 and 6 were adopted, after considerable discussion, by the Office Managers section of the Manufacturers Club of Minneapolis, Minn. These blanks are intended to cover all essential points without going into unnecessary detail, and in this respect are probably representative of the medium type, being neither exceptionally brief nor very elaborate.

THE IDEAL MANUFACTURING CO. OF MINNEAPOLIS

Application for Employment

Date.............. 19........

Name in full..

Address...Telephone No..........

Date of Birth...................Place of Birth..........................

Are you a citizen of the United States?....................................

Married?..........Children?..........Number dependent on you............

What church do you attend?...

Do you live with your parents?..........Give name and address of parent or nearest relative..

Do you own the house in which you live?..................................

Have you any income other than your salary?..............................

Can you secure fidelity bonds? (We pay cost)..............................

Give a brief description of your schooling...................................

....

What studies are you now pursuing?.......................................

Are you now employed?..........Were you ever in our employ?..............

For what position do you consider yourself best qualified?.....................

Name any of your friends or relatives now in our employ......................

....

EMPLOYMENT RECORD

Beginning with your present position, give the information called for below:

Date		Firm Name	Position Held	Under Whom	Salary	Reason for Leaving
From	To					
......	......	....	....	....	......	....
......	......	....	....	....	......	....

Give names and addresses of three persons with whom we can communicate regarding you..

....

Form 5. Employment Application Blank

THE IDEAL MANUFACTURING CO. OF MINNEAPOLIS

Record of Interview

Date................ 19........

Name of Applicant..

Address..

Position for which considered..

Interviewed by...

What was your first general impression of the applicant?........................

....

Personal appearance...

What peculiarity or characteristic impressed you?..............................

....

Instinctively did you like the applicant?......................................

Why?...

Do you think he is fitted, or can fit himself, for the position?...................

What, in your opinion, is the applicant best fitted to do?.........................

....

Healthy................	Loyal..................	Expresses himself well.....
Self-reliant..............	Alert..................	Neat..................
Courteous...............	Tactful................	Respectful.............
Ambitious.	Well-poised............	Optimistic..............

Good home conditions..

Did the applicant impress you as being well-bred?...............................

How old did the applicant appear?..

Would you like to associate with the applicant?.................................

Would you personally employ the applicant?.....................................

Remarks...

....

....

Form 6. Record of Interview with Applicant for Position

References of accepted applicants should be carefully investigated. This is usually done by mail. Open letters addressed to "To whom it may concern" have very little value.

All work incident to securing new employees should be done by, or under the supervision of, one person. In small offices this is attended to by the office manager. Larger offices have employment or personnel departments. Requests for help are made to this department, which selects applicants considered suitable and refers them, for final approval, to the department head requiring help. Promotions and transfers should also be controlled by the employment department. Centralization of the employment function facilitates standardization of employment policies. Experience acquired and records accumulated by this department are valuable aids in improving methods of securing and handling employees.

EMPLOYMENT DEPARTMENT RECORDS.—To facilitate and improve the work of this department, to insure justice being done in matters of promotions, salary increases, etc., and to secure for each employee placement at work for which he is best suited and at which he has greatest opportunity for improvement, some records are necessary and some system of maintaining contact with employees and obtaining data regarding their performances is required.

These records need not be elaborate. In addition to the information given in applications and obtained by investigating references, they should contain, for each employee, records of assignment, transfers, salary changes, attendance, and the information obtained from periodic progress reports furnished by department heads. They should provide a basis for statistics of labor turnover, resignations and dismissals and the reasons therefor, absences and their cause, average length of service, average salary paid, and other matters reflecting the success or failure of the firm's employment policies.

Most essential records can be kept in an ordinary correspondence file with a folder for each employee. Into the folders are put application blanks, interviewer's reports, correspondence with references, etc. Also authorizations of salary changes, transfer records, progress reports, and any other papers pertaining to employees' records that it is desired to keep. When an employee leaves, the resignation or dismissal notice is filed and the folder is transferred. For more convenient reference, this information may be summarized on cards ruled to provide spaces for the data required. Summary of attendance may also be shown on these cards.

In order to make reports required by the U. S. Treasury Department for income tax purposes, it is necessary to make a record of salary payments. Card files or small loose-leaf ledgers should be used. For convenience in posting, cards or ledger pages should have spaces for each pay-day in the year, with dates printed or multigraphed so that it is necessary only to write the amounts.

Attendance records are usually kept separately. 8 x 5 cards having the months of the year printed in the left-hand margin, and 31 vertical columns for days of the month are suitable for this purpose. Spaces may also be provided for carrying forward summaries of previous years' records. If a **bonus** is paid for regular attendance, these cards should include space for record of bonus payments.

The **progress reports** referred to above should be made by department heads at intervals of 6 months or a year, for each employee. The form should contain blanks for rating, as, excellent, good, fair, or poor, on reliability,

accuracy, speed, aptitude, initiative, ambition, energy, personality, etc. Reports should include brief statements, by the department heads, as to the character and ability of employees. Definite values should be assigned to each item so that the combined ratings indicated on a report can be expressed as a quantity for comparison with other reports. This enables the employment manager to keep in touch with work being done by employees. When reasonable progress is not indicated, investigation should be made to determine reasons for poor showing and, if possible, to remove them.

TRAINING OFFICE EMPLOYEES.—In offices that do not make use of any definite method of instruction, new employees are usually turned over, with perhaps a few general instructions from department heads, to older clerks who have had experience in the work. If the older employees are inclined to be helpful, they devote what time they can spare, from their regular duties, for a few days, to training new employees who must depend largely upon their own observation and resourcefulness to acquire knowledge of the business and information regarding the work they are doing.

This lack of method is usually the most expensive method that could be employed. Under such conditions, time required by new employees to become expert at the work assigned is much longer than where adequate instruction is given. Each new employee develops his individual system for handling details which results in as many systems as there are clerks doing the work. Time lost and mistakes made, due to lack of proper training, cost more than expense of providing some effective means of instruction.

Having decided that, inasmuch as clerks cannot be hired ready-trained, it is better to train employees than to allow them to train themselves at the expense of the office, the amount of educational work to be attempted and methods to be used should be considered.

METHODS OF TRAINING.—Some large offices have organized school departments in charge of trained instructors. These departments conduct courses covering the various kinds of clerical work and are used not only for training new employees but also for giving more advanced instruction to older employees where necessary for their promotion. As much as possible of the student's time in the classroom is spent on actual office work, so that it is not altogether an extra expense. In some cases the work from a certain section of the territory is done in the school department.

This method is useful in very large offices in which the volume of work is subject to seasonal fluctuations, necessitating periodical employment of large numbers of new clerks, but for the ordinary business it is considered too elaborate. In other large institutions, the work of the school department, instead of being done in classrooms, is carried on throughout the office. New employees begin their regular work at once but do it with the assistance and direction of a staff of instructors.

For the average office, the use of a carefully prepared **office manual** is the most practical method of giving new employees a good general idea of the business as well as detailed instructions regarding the work to which they are assigned. This method has many advantages. Written instructions may be read at leisure and referred to as often as necessary until thoroughly understood. As conditions change, the manual is revised so that employees always have before them authoritative information concerning details of their work and its connection with, and relation to, work done by other members of their departments and by other departments. Inves-

tigations should be made occasionally to ascertain whether instructions given in the manual are being carried out and employees should be examined from time to time as to their knowledge of its provisions.

Employees should be encouraged to take advantage of opportunities to improve their general education. In all large cities, there are **night schools** in which academic work, interrupted by the necessity of going to work, may be continued or special business subjects may be studied. Where such schools are not available, some of the many **correspondence courses** should be recommended.

New employees who have had no experience in office work are given simple tasks at first and when it is necessary to fill advanced positions from outside the organization, persons selected have some technical knowledge of the work for which they are hired. In either case the office manual gives necessary detailed instructions for performing the work assigned and also general information regarding the business and methods and systems in use that enable intelligent and ambitious employees to prepare themselves for larger responsibilities.

THE OFFICE MANUAL.—A complete manual usually contains four sections:

1. Office rule book
2. Policy book
3. Departmental standard practice instructions
4. Individual instruction sheets or desk cards

A **brief history** of the origin and development of the concern is usually given in either the rule book or the policy book. If the policy book is intended for general distribution, it seems to be the logical place for the historical section. If the policy book is for use only by departments that come into direct contact with the public, the history should be included in the rule book.

The history contains the things employees ought to know about the business; its founders; the goods it makes or sells, and their uses. It may also contain descriptions of improvements in methods of production and distribution in that particular line. It should furnish employees authoritative information on these subjects, enabling them to answer questions intelligently on features of the business that are of general interest and encourage them to take pride in their association with it.

Some manuals also include a section on **organization.** This section is for use of executives only and describes the duties and responsibilities of each executive. It is useful in straightening out the lines of authority. It should follow the organization chart, taking up in turn each officer and department head, and describing in detail the matters for which he is responsible and over which he has control.

The **rule book** contains rules governing personal conduct and the use of office facilities, applicable to all office employees. It usually includes an introduction explaining that rules are necessary to secure harmonious functioning of any organization. This introduction should not be an apology for rules. It should point out that rules are made for the mutual benefit of all concerned and should convey the impression that their observance will be insisted upon.

This section covers such matters as office hours, registering time, tardiness and absences, overtime, vacations and holidays, salary payments, changes of address, visitors, personal mail, telephone usage, personal tele-

phone calls, subscriptions, standards for desk arrangement, use of messenger service, ordering office supplies, use of files, deportment, etc.

Policies, or general regulations, as they are sometimes called, are the rulings of the management upon the manner in which the business is to be conducted. It contains the broad general policies laid down for the guidance of executives, and also definite policies applicable to specific cases based on decisions made from time to time. This provides subordinates with an authoritative basis on which to handle difficult situations that arise in their daily work and relieves executives of the necessity of deciding the same things over and over. Policy books are especially valuable to concerns having branch offices where much of the firm's business is carried on at a distance from the controlling home office.

Compilation of rule books and policy books presents no serious difficulties. It is usually necessary to codify only rules and policies already in effect but not previously put into writing.

Preparation of standard practice instructions is a much more formidable undertaking and one not to be attempted by a novice. Satisfactory results will not be attained unless the work is done or supervised by someone who thoroughly understands underlying principles and has an intimate knowledge of the details of office routine.

While department heads are usually not fitted for the task of writing standard practice instructions for their departments, they should be expected to assist by offering suggestions and criticisms and after instructions are completed, and should be responsible for keeping them up to date and in operation. Successful manuals are usually the result of many revisions.

This section may be a loose-leaf book supplied department heads for the use of their entire departments, or it may be made up of individual instruction sheets for the clerks, a collection of which with a chart of the department's organization and a comprehensive description of its processes and of their connection with work done in other departments, makes up the department head's set. It should be indexed for ready reference and the system of numbering pages should permit inserting new material without disarranging page numbers outside of sections in which changes are made. The decimal system of numbering is usually recommended. Each position described in this section should be identified by a number corresponding to the number shown on the organization chart, which should be displayed somewhere in the office so that employees can locate their positions on the chart and thereby obtain a better understanding of the relation of their work to the business as a whole.

This section is used as a textbook for instruction of new employees and as a source of information for deciding disputes and answering questions regarding office routine. It facilitates establishment of standard methods; enables the management to keep more closely in touch with the details of office activities than would otherwise be possible, and eliminates dependence on memories of employees, who may leave, for information necessary to carry forward routine operations. It should be sufficiently detailed to give all the information necessary to carry on the work in the approved manner, but the information should be presented as concisely as possible.

The completed manual should be in charge of one person to whom suggestions for changes or additions are submitted and who works with department heads to keep it up to date.

Some authorities who advocate making **time and motion** studies, include in standard practice instructions, detailed directions for the location of

papers on desks and for the motions to be made in performing each operation; but while the plan is undoubtedly good in theory, serious difficulties are encountered in making practical application of it to many kinds of office work.

Following is an excerpt from standard practice instructions in use by the Pillsbury Flour Mills Co. covering work done by branch office invoicing departments. It illustrates the usual method of writing instructions where time or motion studies are not attempted. It has been used for a number of years and has proved to be adequate.

Branch Office Invoicing

Importance of: The invoice sheets, F–530 and the group of forms that make up the billing set, are the foundation on which all of our stock records and customers' accounts are based. Accuracy and neatness are, therefore, of the first importance and speed is a secondary consideration. The carbon copies must be legible. Never strike over a figure or letter. If a wrong key is struck, or an incorrect word or amount typed, X out the entire item and rewrite.

When Made: Whenever possible, invoices should be made before the goods are delivered. When this is impracticable, as on rush orders phoned in or where the customer calls at the warehouse, the receipt may be taken on F–135 or F–246 and invoice made from this receipt or from F–258–A.

Numbering: All orders from which invoices are to be made must be identified by order or invoice number and final invoice show same number. Where delivery instructions are phoned to the warehouse, such instructions must include order or invoice number. Use invoice numbers when possible. Invoice clerks can readily give next available number. Where salesmen order goods out on F–651, a separate consecutive series of numbers should be used for each stock so that a missing order can be easily located.

Made From: Invoicing is done from the copy of F–258 turned in by the salesmen or F–258–A which is used for telephone orders received at the office and as a memorandum for deliveries on bookings. On orders already delivered, the invoice can be written up from F–135 or F–246. On outside stocks where goods are ordered out by salesmen on F–651. the invoice for office record is made from that form. The invoice number should be written on the order which is then filed numerically under the invoice number.

Record Papers Made:

Yellow—Ledger sheet
White —Customer's invoice
Pink —Salesmen's duplicate invoice (if wanted marked "Statement" same form as green)
Green —Statement
Pink —Warehouse order and receipt
White —Delivery receipt

On C.O.D. or draft items, the green statement goes to the cashier for his check against C.O.D. and draft returns.

Separation of Warehouses: When deliveries from more than one warehouse are invoiced on a page, F-530, make a separation between each warehouse by spacing several lines and writing the name or number of the warehouse on F–530 above the invoices delivered from it.

Column Headings: The first two columns under the headings "Bookings" and "Immediates" are for the use of the accounting department.

Under "Date Sale" enter the number and date of the booking record (F–383) on which the invoice applies. On invoices of Petty Sales, write the word "petty" in this column. Use "Order Number" column only where delivery instructions carry order instead of invoice number, but be sure to use it in such cases. The next column is headed invoice number. Always be careful to avoid skipping or duplicating a number.

In the date column should be put, as nearly as possible, the actual date on which the goods are delivered. Credit invoices canceling deliveries not accomplished, show date of original charge but a new invoice number. If goods have been delivered and receipted for and later returned, credit should show date of such return.

It is very important that the customer's name be correct as to spelling and initials and that the address be correct, street numbers are always preferable. Names and addresses incorrectly written cause much delay and annoyance. Doubtful names and addresses should always be verified in the directory or the credit file. Use full firm or corporate name for partnerships and corporations. Use both trade name and proprietor's name where business is conducted under trade name (not incorporated). Always invoice in the name in which booking is made. Do not book in the name of firm or corporation and invoice in the name of an individual or official member of the firm or corporation.

In the blank column to the right of the name and address put the classification as per General Regulation No. 41.

The number of packages and the weight per package are entered in the next two columns.

In the column headed "Kind" put the letters, Pa., Ct., Jt., Pa. B., Ct.-B., or Wd. to indicate paper, cotton jute, paper baled, cotton baled, wood. For specialties use cont. or case

In the next column enter the brand as P. Best—4X Pat.—BB. Pat.—H. Bran, Cereal, etc.

The price per barrel, ton, or container is entered in the Price column. On invoices having only one item the amount column is not used, the extension being carried directly to the total column.

If there is more than one item on an invoice put the extensions in the amount column and the total in the total column. Where there are deductions or additions for discount, handling charges, etc., total the extensions in the amount column and under this put the amount to be added or deducted and carry the final total to the total column so that there will be only one amount in the total column for each invoice, and that amount will be the total of the invoice.

Returns and Cancellations: Returns, cancellations, etc., are billed in the same way using a red ribbon and red carbon.

The reason for or explanation of all credit invoices should be stated. Where an invoice is being canceled the number of the original invoice should be included in the explanation, also the original date of booking.

Rechecking: It is essential that form 530 be proven before any copies of billing set have left the office, and incorrect invoices so discovered should be ruled out entirely and rebilled. If an invoice has been made incorrectly and error is not found in proving F–530, or if any copies of invoice set have left the office, cancel the entire invoice and rebill. This is very important.

Proof of Form 530—Invoice Side: The number of barrels for each invoice is entered in the column so headed. Always use the decimal equivalent of fractions of a barrel and carry out to three places if used in making extensions. To arrive at the basing price used in making the extensions, add the package differential to, or deduct it from, the invoice price. Extend into the "Amount" column. Feed and all other items (except specialties for the handling of which see below) on which a differential does not apply are entered for the same amount as on the invoice.

The "Basis Price" for invoices carrying any per barrel deductions or additions, such as discounts, cartage charges, etc., should be the basis price, including such deductions or additions. Add the "Number of Barrels," the "Amount" and the "Total Invoice" columns.

Warehouse Side: In order that pages may be proved as soon as filled without waiting for further billing, make proof on back of the copy of F 530 going to Minneapolis, and take copy on back of previous Branch Office sheet. Enter the number of packages from each invoice. Write in the proper package headings where they are not printed. Make a separate section for each warehouse and total the packages for each section. Reduce these packages to barrels; write the number of barrels in each column under the package total and cross-foot.

Make a grand total of packages for all warehouses at the bottom of the page. Reduce these packages to barrels and cross-foot. The final total will equal the total of the "Number of Barrels" column on the invoice side. Multiply the total barrels for each package by the differential for that package and foot. Multiply the total number of containers at each net price of each specialty by the net price per container and foot. Add these two amounts and the amount thus secured should equal the difference between the total invoice column and the amount of the proof. The figures necessary to the above proof should appear on the sheet where such proof is made. See General Regulations No. 20 and No. 70.

Disposition of Papers: The yellow ledger sheet is turned over to the bookkeeper after F–530 has been proven.

Whenever possible to do so, deliver the white invoice enclosed in transo envelope to the customer with the goods. (Attach to order given to truckman or warehouseman.) Warehouseman takes truckman's receipt on pink warehouse order or F–135 or 246, or on loading slip showing recap with number and assortment of each order. Truckman takes customer's receipt on white copy or F–135 or 246. Warehouseman or delivery men retain the custody of customer's receipts for deliveries made by them as a proof of delivery.

Business Departments of a Modern Office

1. **PURCHASES AND STORES.**—This department is treated fully in another section and is referred to here only to give an idea of its relation to the general organization.

One of the first requisites of a manufacturing enterprise is a supply of raw material. Material must be purchased, received and stored, and issued to the factory as required. In some organizations all of these functions are combined in a purchase and stores department. In other cases responsibility is divided between a purchase department and a stores department. Where two departments are maintained, it is, of course, necessary that they work together but this plan is considered preferable, at least from the accountant's point of view.

By having purchases and stores handled by separate departments, the auditor is able to obtain reports from independent sources and to arrange his system of internal audit so that one department acts as a check upon the other. As amounts involved are large and opportunities for loss or fraud are considerable, the question of adequate internal audit is very important.

All purchases should be made by the purchasing department. This department studies markets and market conditions and keeps in touch with development of new materials and new types of equipment. It develops records and compiles information that enables the purchasing function to be carried on efficiently.

After goods have been counted, weighed, measured, or otherwise accounted for by the receiving department, they are turned over to the stores department where, after entry is made in perpetual inventory records, they are stored until required for use, when they are issued upon requisition. The storekeeper makes such records and reports as are required by purchasing and accounting departments and is responsible for having on hand all material received and not covered by properly authorized requisitions. Stores entrusted to the care of the storekeeper should be recorded and accounted for as carefully as money in the hands of the cashier.

The purchasing department buys only when it receives properly authorized purchase requisitions. These requisitions originate in departments requiring material or are made by the storekeeper when stocks fall below established minimum amounts and should be approved by the manager or other officer of the company; but it should not be necessary for the manager to approve each individual requisition for goods to complete approved schedules of production or to keep stocks of regular supplies above approved minimums. Approval of production schedules and inventory standards should act as authorization to make necessary purchases on requisitions from the departments needing material. This relieves the manager of the detail of approving every purchase requisition an leaves him more time for consideration of requisitions for special purchases not covered by the exceptions mentioned above.

Purchase requisitions should be prepared in detail by persons familiar with requirements as to kinds, quantities, dimensions, delivery dates, etc., giving the purchasing department an opportunity to devote all of its time to buying material and securing delivery as needed. The judgment of this department as to quantities to be purchased, etc., is valuable but it should not have authority to reduce quantities or to delay purchase of material requisitioned without the approval of the requisitioner, nor to anticipate requirements by purchasing goods not requisitioned without special authority of the management.

2. TRAFFIC.—Although organization of separate departments to attend to traffic matters has become general only in comparatively recent years, traffic management is now recognized as a distinct branch of business organization The functions of this department were, and in some cases still are, handled by other sections of the organization.

Tariffs, regulations, and rulings issued by various transportation companies are constantly increasing in number and complexity, new volumes being filed daily. There are also more than 20,000 different classifications of goods. Intricacies surrounding traffic problems have become so numerous and varied that to the uninitiated they seem a hopeless tangle. A remark made by Judge Landis of the United States District Court at Chicago illustrates this point: "The publications involved in the proceedings were so ambiguous and so technically phrased as to be clearly beyond the comprehension of the layman and to necessitate the services of experts to determine the effect of their phrasing and the opinions of these experts were not always in accord."

Reliance upon railroad employees for routing and classification, and leaving the auditing of freight charges in the hands of clerks who have not specialized in this work, may result in serious loss. It has frequently been found that a traffic expert, by better routing of shipments, detection of errors and overcharges, and by securing more economical classification, often made possible by slight changes in methods of packing or in description of goods, saves more than enough to pay all expenses of maintaining this department. Traffic departments, which have to deal only with a limited number of commodities shipped to or from a comparatively limited number of points, soon become better authorities than railroad rate clerks on rates and classifications applying to products shipped by their firms.

The traffic department has charge of all outside transportation, inbound and outbound; furnishes instructions for packing and loading; is responsible for securing lowest rates and best service; verifies all transportation expense bills; and files claims for overcharge, loss, or damage. It expedites movement of shipments urgently needed or delayed in transit and, if necessary, handles claims for customers. It furnishes the purchasing department with rates and estimates of time required in transit from various possible sources of supply, and the sales departments with rates needed for fixing delivered prices.

TARIFF FILES.—Transportation companies are usually willing to supply tariffs needed by bona fide shippers. A good way to build up a file is to have the freight agent indicate tariff authorities on expense bills or shipping receipts for inbound and outbound shipments. Copies are then requested from agents, associations, or committees by whom they are issued. Requests should give I.C.C. numbers and tariff numbers, if known, as well as classes of traffic covered, and should also ask that supplements and reissues be forwarded as issued.

Loose-leaf binders are usually recommended for filing tariffs, although there are various types of special cabinets and racks made for this purpose. Binders should be labeled to show tariffs contained therein and numbers of the shelves on which they are to be filed.

In filing tariffs it is customary to divide them into two groups: (1) those issued by railroads for their own account, and (2) those issued by agents, associations, and committees. These main groups may be subdivided on any convenient basis. Classification used by the Interstate Commerce Commission is as follows:

1. **Class-rate tariffs,** which name only class rates and are so indicated on their title page.
2. **Class and commodity tariffs,** which in addition to class rates, contain rates on specific or general commodities.
3. **General commodity tariffs,** which contain rates on commodities which are too numerous to mention or indicate on the title page of the publication.
4. **Specific commodity tariffs,** which apply on one commodity or on a group of commodities that may be readily designated in a brief description, such as brick and brick products, iron and steel, iron and steel articles, and coal and coke.
5. **Miscellaneous schedules,** which govern special services, such as weighing, refrigerating, milling in transit, storage in transit, switching, demurrage, general rules, classification and exceptions.

Publications are arranged alphabetically within these subdivisions by roads and associations. Superseded issues should be taken out of the working file but should not be destroyed, as it is sometimes necessary to go back several years to support claims or check corrected expense bills.

A **card index** for record of rates to points to or from which shipments are frequently moved prevents waste of time in repeatedly looking up the same rates and refiguring combination rates, and enables clerks not having expert knowledge of rates to check expense bills.

BILLS OF LADING.—There are two kinds of bills of lading, "straight" and "order." Order bills of lading are negotiable, are drawn to the shipper's order, and consignees, to secure goods, must present the bill of lading indorsed by the shipper. They are used when it is desired to secure payment for goods before delivery is made and are usually forwarded to consignee's bank attached to draft. Straight bills of lading are not negotiable and are made out to the names of consignees.

Bills of lading are contracts between carriers and shippers and also receipts for goods shipped. Blank forms are supplied by carriers, but most large shippers use their own forms which are printed to register with other office records so that the greater part of the information called for may be filled in, by use of duplicating machines, from the same impression that makes records for packing, shipping, billing departments, etc. This method effects considerable saving of time and avoids the possibility of mistakes being made in copying. They are usually made in triplicate, consisting of "original," "memorandum," and "shipping order." The original is for the consignee, the memorandum is retained by the freight agent and the shipping order is held by the shipper. A fourth copy, "duplicate," is also sometimes used.

It is important that bills of lading be carefully prepared. Shipper's and consignee's names should be shown in full; complete routing should be given; actual gross weights should be stated; description of freight should be accurate

and complete, should be given in terms used in traffic classifications, and should agree with markings of packages.

TRACING FREIGHT SHIPMENTS.—Tracers are communications addressed to agents of transportation companies, stating that certain shipments have not been delivered and requesting that an investigation be made to locate and, if possible, to expedite delivery of the goods, and that results of the investigation be reported. Printed forms, on postcards, with suitable blanks for filling in necessary data, are an economy where considerable tracing is done. Tracers should contain all available data, including date of shipment and description of goods. They should not be started until there is evidence of undue delay. Tracing clerks should know railroad routes, junction points, schedules of package car service, points of break, and the normal time required in transit. They should keep in touch with traffic conditions so that in case of accident or congestion they will understand causes of delays. Unnecessary, promiscuous tracing is a waste of time, places an undue burden upon the carriers and tends to detract from the effectiveness of bona fide tracers.

When information is urgently needed or it is desired to check railroad service, shippers sometimes do their own tracing instead of addressing freight agents at points of shipment. Waybill numbers (secured from railroad bill clerks) with car numbers and descriptions of shipments are sent, by wire or mail, to junction agents, with request for reports as to whether the shipments in question have been handled. In the case of L.C.L. shipments these requests should also give reference to trains in which shipments were forwarded. This information can be secured from the yard master's office or from freight agent.

Proper marking of each package included in L.C.L. shipments helps to insure prompt handling and to minimize the opportunities for shipments to be delayed or lost in transit. Tracer files should be carefully watched so that claims for loss may be filed within the time limit set by the Interstate Commerce Commission.

CHECKING EXPENSE BILLS.—The principal items to be considered in auditing transportation expense bills are weights, rates, and extensions. Weights should be checked with bills of lading. Where charges are based on minimum weights, the record of "cars ordered" should be consulted. If carrier furnished cars larger than those ordered or if shipments were transferred to larger cars en route, charges should be computed on the basis of size of car ordered, provided shipment could have been loaded therein.

In computing rates, descriptions of articles and size and kind of packages or containers, method of packing, etc., must be taken into consideration. Description includes class or commodity name, material composing article, purpose or use of article (finished, unfinished, raw, damaged or scrap), tariff classification, and value of article. Careful choice of terms used in describing goods on bills of lading is often necessary in order to secure lowest possible rates. Railroads charge the highest rates warranted by descriptions given on bills of lading, and use of a specific designation sometimes brings an article into a class taking lower rates. Shipments moving from one classification territory into another should be packed and described with a view to securing lowest rates in both classifications. Shipments take different rates according to method of packing, that is, whether set up or knocked down, boxed, crated or bundled, nested or unnested, etc.

Routing should be checked. If routes specified by shippers are not

followed, carriers are liable for any additional expense. Where routes are not designated by the shipper, it is the duty of carriers to use cheapest routes. Switching and drayage charges should be verified, as these services are sometimes included in rates.

An important point is to guard against making duplicate payments. This can be done satisfactorily only by tying up freight payments with records of goods shipped and received, and, while it is an auditing department function, it may properly be mentioned here. For **inbound shipments,** receiving report numbers should be entered on expense bills, and pro numbers of expense bills should be noted on receiving department records.

Some large shippers who make a practice of prepaying freight on outbound shipments enter all such shipments in book records having columns for date, shipper's number, car number and initials, loading point, destination, commodity, rate, amount, amount paid, date paid, and voucher number. The three last columns are posted from paid expense bills, the other columns from bills of lading on which rates have been entered by the rate clerk. This provides for an independent computation of amounts due and weights shown in this record are reconciled with billing records.

To guard against the tendency of routine workers to take things for granted, some concerns have printed forms on which are entered data covering both inbound and outbound shipments and on which independent calculations of freight charges are made. When completed, the forms are compared with expense bills.

It is usually possible, by giving bonds, to arrange with railroads for at least 48 hours' time in which to audit expense bills and thereby have errors corrected before payment is made. When mistakes are discovered after bills are paid, claims for overcharges are filed.

CLAIMS.—There are two kinds of claims: (1) loss and damage claims, and (2) overcharge claims. The Freight Claim Association has designed separate standard forms, approved by the Interstate Commerce Commission, for use in filing the two classes of claims, but many firms use their own forms for this purpose. These forms should be prepared in triplicate. A **white sheet**—original—is sent to the carrier, a **yellow copy** is filed with the copy of the letter of transmittal, and a **pink copy** is turned over to the accounting department as a basis for entry on the general books.

The following **documents** should be presented with **total loss claims:**

1. Itemized bill against carrier.
2. Original bill of lading or, if not obtainable, a certified duplicate, accompanied by a statement as to why the original bill cannot be surrendered.
3. Original paid freight bill.
4. Certified copy of invoice.
5. An affidavit of non-delivery of the shipment.
6. If the last shipment has been traced, tracing papers should be attached to claim.

For **damage claims,** items 5 and 6 are not required. Claims for damage are more readily paid if apparent damage to packages or contents is noted on receipts signed by truckmen or, in the case of carload shipments, delivered to private sidings, if agent's notations of damages are secured on expense bills.

In the case of shipments received apparently complete and in good order but when unpacked are found to be short or damaged, additional affidavits to support claims for loss or damage are required, as follows:

1. Affidavit of shipper that shipment was properly packed and delivered to a stated cartman.
2. Affidavit of cartman that shipment was delivered by him to the railroad agent in the same order and condition as when received by him.
3. Statement of consignee regarding condition of shipment, discovery of damage, and notification made to delivery agent.
4. Affidavit of consignee that goods were promptly unpacked and that articles in question were damaged or missing.
5. Affidavit of consignee's cartman that shipment was received by him at the delivery station at a stated time and was delivered by him at a stated time and place in the same condition as when received. Also a statement as to his observation of apparent condition of shipment.
6. Claimant's damage statement. A form provided by carriers, to be filled in partly by shipper and partly by consignee.

Overcharge claims should be supported by the following papers:

1. Original paid freight bill.
2. Certified copy of invoice if claim is based on weight or valuation or if shipment has been improperly described.
3. Original bill of lading.
4. Tariff authority for rate or classification claimed.

Claims should be filed as promptly as possible. The **legal time limit** for filing loss and damage claims is 6 months after damaged shipments are received or after expiration of reasonable time for delivery. This time limit may be extended indefinitely by notice to carrier that a claim will be filed.

Carriers are required by law to make a thorough investigation within a reasonable time after a claim has been filed and are not allowed to settle claims until investigation has been made. Payment of claims can usually be expedited by methodical follow-up, as carriers are apt to be slow in making settlement unless prompt handling is urged in a systematic manner. Claims should be numbered and the numbers referred to in correspondence with carriers.

3. CREDITS AND COLLECTIONS.—Organization of, and methods used in, this department are treated in full elsewhere in the manual and this discussion is intended only to give an idea of the relation of the credit and collection department to the general organization.

Extension of credit is an expression of confidence in the ability and intention of debtors to make payment in accordance with the terms and conditions of their agreements. It is the duty of the credit department to estimate the risk connected with proposed credit extensions and to decide whether the advantages to be gained by entering into contemplated business relations are commensurate to the possibilities of loss involved and, having granted credit, to secure settlement in the manner and at the time agreed upon.

The credit and collection manager derives his authority from, and performs his duties under, the supervision of the treasurer. Where collections are handled by separate departments, the collection manager is usually subordinate to, and under the direction of, the credit manager.

The **credit manager** is responsible for placing proper limitation upon balances of customers' accounts and for keeping the sales department advised as to the financial standing of customers. Before any sale is completed, the

customer's credit should be approved by this department for the amount of the proposed sale. He is also expected to accelerate payment of overdue notes and accounts receivable and, when necessary, to place them with collection agencies or with attorneys for suit. At stated intervals he prepares lists of uncollectible accounts, with statements of the history of each and of efforts made to collect, for submission to the board of directors, which alone should have authority to order them written off the books.

The credit department should work with the sales department to the end that both may profit by exchange of information and establishment of mutual understanding of problems incident to the work of each. The credit manager who is concerned only with keeping losses down to the lowest possible point may fail to serve the best interests of the business by overlooking opportunities for constructive sales promotion work. Salesmen who call on the trade can give valuable information regarding condition of their customers' businesses, although their opinions on credit matters are usually lacking in conservatism and must be discounted by the credit man.

Co-operation of the accounting department is also necessary. Information as to the condition of customers' accounts should be available at all times. Statements of accounts that are past due or that have reached the credit limit set, should be furnished as required.

4. SALES MANAGEMENT.—A broad conception of the sphere of sales management comprehends not only supervision and direction of salesmen in the field, but also control of advertising and of sales promotion work. **Advertising** and **sales promotion** are parts of the sales function and a well-balanced plan for sales efforts must unify and co-ordinate these related activities, but the modern tendency toward specialization has resulted in establishment of separate advertising departments by most large concerns and, where the amount of sales promotion work attempted is extensive, it is also usually handled by separately organized departments. These separate departments are technical divisions of the sales organization and their efforts should be directed by a central authority.

The **relation of advertising to sales departments** is a matter that often causes friction. The plan of having control of advertising vested in the sales manager is undoubtedly correct in theory. Practical application must depend upon capability of the sales manager, size of the concern, extent and methods of advertising, etc. The viewpoint and technical training required for success in the field of advertising is absolutely different from that necessary for successful management of salesmen and it is practically impossible for a man actively engaged in supervising salesmen also to keep up with the details of advertising work. Sales managers who control advertising should not attempt to supervise technical operation of advertising departments but should concern themselves only with broad policies. In some large sales organizations these departments are on a par, both being under the broad authority of a higher official who lays down general policies and settles all disputes arising between them. Where this arrangement can be effective, it is probably the best.

Another point where friction frequently occurs is between sales and production departments. The factory insists that the sales department find a market for whatever it is equipped to produce, while the sales manager demands that production be adapted to meet his ideas of market conditions. Conflicts between these departments must be decided by a general manager who takes into account questions of cost, financial conditions, and other matters connected with the general management point of view. The sales

department must be given some authority over production. There is no profit in making what cannot be sold profitably. On the other hand, the sales manager should understand that factory equipment must be employed as continuously as possible and that it cannot be remodeled to meet all of the ideas of salesmen who imagine that something different would find a readier sale and who are usually inclined to cater unnecessarily to demands of various customers for variety of models and designs.

USE OF STATISTICAL INFORMATION.—Modern methods of sales management depend largely upon use of statistics. Statistics, to the person who knows how to read them and who has imagination to see behind them, are pictures of conditions; signposts pointing out the probable trend of events. It has been said that statistics are no better than the men who make them, and it should be added that their usefulness is limited by the understanding of executives for whom they are made. The executive who is fond of quoting the phrase "lies, damn lies and statistics" is advertising his own inability to understand and make use of statistical information.

Statistics are compiled to indicate results of past performances or possible future developments. For the purpose of **sales control,** sales records are usually analyzed to show: sales, classified by commodities to each customer for months or other suitable periods; periodical recapitulation of sales by salesmen's territories and by branch office territories; also classified by commodities; recapitulation of sales to show total sales of each commodity for corresponding periods. The unit used may be one of value or of quantity as best suits the needs of the business. Total selling expense, classified as may be desirable, and selling expense per unit should be shown in connection with sales statistics for each salesman and each branch office.

These records are usually arranged to display results for the past month and for the year to date, with comparative figures for corresponding periods of the previous year. Without some basis for comparison, statistics of past results have little value.

Information from which these statements are compiled is taken from **orders** or from **delivery records.** In some cases where the unit used is one of value and sales are not considered complete until delivery is made, the figures are taken periodically from the sales ledgers, but this source is seldom satisfactory because the information is ordinarily not up-to-date and most of the value of such information depends upon its being promptly available so that dangerous tendencies may be corrected at the earliest possible moment. It is usually necessary to copy sales orders to provide needed office records and with modern methods of making copies the expense of providing an extra copy for the statistical department is slight.

In addition to the basic analysis of sales mentioned above, which are useful for almost any sales organization, it is possible to compile many other statistical records and comparisons to satisfy the requirements of different situations. **Salesmen's daily reports** contain information which, if properly classified, is useful to sales, production, and credit departments, and there are many other sources of information open to the trained statistician.

One of the first requisites for intelligent direction of sales efforts is reliable data regarding **sales possibilities** in the various sections of the territory. Estimates of possible sales, for an established business, are based partly on past performance and partly on calculations of buying capacity. New enterprises, having no special knowledge of market conditions as related to their product, must depend entirely upon census figures and other published statistics in forming estimates of possible sales volume.

A method commonly used to aid in establishing **sales expectancies,** is to list towns or counties and population and to set opposite each the amount of sales for the previous year. For staple products and for nearly all merchandise, **per capita consumption** is a dependable **measure.** The ratio of business to population is fairly constant. Many valuable statistics are based primarily upon comparison of possible per capita consumption with present rate of consumption. The nature of the business has an important bearing on this question. For example, a firm selling automobile accessories would use the total number of automobiles licensed in counties or states rather than population as a basis for development of consumption statistics. Characteristics of certain towns or localities that affect buying capacity of products under consideration are, of course, taken into account. Such estimates, although they can be only approximately correct, give the sales manager standards with which to compare results obtained.

CONTROLLING SALESMEN FROM THE HOME OFFICE.—Extent of home office control and methods used to maintain the desired degree of control vary with different kinds of business and different types of sales organizations. For example, salesmen selling staple commodities to retail stores and making calls at regular intervals require different handling than specialty salesmen who are more dependent upon the home office for information. It is no longer customary to send salesmen out, relying on their own resources to find business where and as they can. It is becoming more and more the accepted practice to plan salesmen's work for them; to know where they are, and in so far as is possible to know what they are doing each day; to set definite tasks; to furnish all possible aid and helpful information; and check results closely to determine whether home office instructions are being followed out. Territories are clearly defined and definite quotas are established.

LAYING OUT TERRITORIES.—The governing factors in determining sizes and boundaries of salesmen's territories are volume of possible business and transportation facilities. Salesmen should have only so much territory as they can work intensively and efficiently. Number of customers and prospects should be considered as well as frequency of calls. Logical **travel routes** should be followed in laying out salesmen's territories so that they can be covered with the least possible mileage and in the shortest time consistent with systematic development of business possibilities. **Counties** are considered more satisfactory than **states** as territorial limits. Small units allow more flexibility of arrangement and the county is the smallest unit for which census figures are available.

SETTING QUOTAS.—Methods described above, for determining sales possibilities for the territory as a whole, may be used in establishing quotas for individual salesmen. The plan of giving salesmen **definite marks** at which to shoot is coming into general use. Salesmen who know how much business their territories are expected to produce and know that they are expected to secure it, have definite goals toward which to work, do better work, and are better satisfied than if left in uncertainty as to what is expected of them. Quotas should be reasonable—not impossible of attainment. As a general proposition it is better to fix amounts too low rather than too high. A salesman who is given a quota so large that there is no hope of selling it, is apt to become discouraged. A rule followed by some firms is to arrange quotas so that 80% of a salesman's assignment is considered fair business for his territory.

PLANNING ROUTES.—Salesmen should be required to cover their territories in a systematic manner. Without a definite plan and some method of control, a great deal of time is lost and unnecessary expense incurred by salesmen crisscrossing and jumping from place to place in a haphazard manner.

Map and tack systems are generally used to record routes. Strings attached to tacks show routes as planned. Strings of different colors may be used to show actual movement and present location of salesmen. Very useful **graphic records** may be made of these maps by adding different colored tacks to indicate salesmen's headquarters, customers, dealers, prospects, etc.

The **degree of control** to be exercised depends upon the nature of the business. Where most calls are made on prospects developed by advertising and sales promotion departments, routes are sometimes scheduled at the home office in the same way that jobs are handled by a factory planning department, salesmen being given cards or slips describing calls to be made during the next few days. In some lines, where calls are not made regularly, it is customary to prepare the ground for salesmen by advising customers or prospects of impending calls and sending advertising literature or other matter a few days before salesmen's visits are due.

The most efficient routing having been determined, salesmen should be permitted to depart from established routes only for urgent reasons. Where it is practicable to do so, **complete itineraries** should be worked out with lists of calls to be made and reports checked carefully to see that salesmen are following home office instructions and not skipping towns to promote their personal comfort or spending undue time with favorite customers, thereby neglecting more difficult prospects.

DAILY REPORTS.—The basis of home office control is salesmen's daily reports. They should contain records of calls and results in sufficient detail to provide a good bird's-eye view of what each salesman is doing and what conditions are being met in any part of the territory.

In form these reports are made to suit the requirements of individual sales managers. Information usually called for includes: name of dealer; location—good, fair or poor; nature of business—retail or jobbing—city or country; condition of store and stock; display windows; advertising—kind and amount; appearance of clerks; competitive lines carried; average stock turnover; name of buyer and all available information regarding him; salesman's name; date of interview; date next call should be made.

Reports should be arranged so as to require the minimum of clerical work on the part of salesmen. **Compilations** to show number of calls per day or per town, number of orders, class of goods sold, average amount of orders, etc., should be made at the office and not required of salesmen. Such work can be done better and more economically by office employees. Salesmen are temperamentally unsuited for clerical work and to compel them to prepare long complicated reports dampens their enthusiasm and uses up energy that should be employed in securing business. Best results are obtained by making report blanks as simple as possible and insisting that they be filled out properly and completely.

RECORDS OF CUSTOMERS AND PROSPECTS.—Prospect files are an important part of sales office records. They are usually kept in the form of **card indexes,** in some cases supplemented by envelope systems or correspondence files containing special reports, etc. Files are divided by **states**

and **towns,** with names arranged alphabetically within the divisions. Cards should contain prospect's name, address and business, list of competitive goods handled, buyer's name, salesman's name or how secured if not reported by salesman, and any other pertinent information available. Space should be provided for record of correspondence, salesmen's calls, catalogs and other advertising material sent, etc.

Information for this record is taken from salesmen's reports, from correspondence, and from any other available sources.

When a prospect becomes a customer, his card is transferred to the customers' index and such additional information added as may be deemed necessary. Backs of cards are sometimes ruled to accommodate all data called for in salesmen's reports.

EXPENSE REPORTS.—All well-managed firms have definite understandings with their salesmen regarding what should be included in expense accounts and furnish standardized blanks for weekly, semimonthly or monthly reports. Latitude allowed salesmen in spending and accounting for money varies widely with different firms. The item of "entertainment expense" featured extensively by the older school of salesmen is being rapidly eliminated by modern ideas of sales management and closer accounting methods. Sales manuals should contain definite statements of policies as to expense accounts and detailed instructions for making up expense reports.

BRANCH OFFICES.—Branches are established to make possible better services to customers and to facilitate control of salesmen. **Branch managers** are held responsible for results in their territories, but the extent to which they should be given a free hand in management and development of territories assigned to them is apparently not agreed upon. It is, of course, understood that all instructions to salesmen should pass through the branch manager and that nothing should be done to weaken his authority. The sales manager should, nevertheless, take an active part in fixing salesmen's territories and quotas, hiring and discharging salesmen, etc. He should receive the same reports from, and maintain the same records for, salesmen working under branch offices as for salesmen working directly out of the home office, duplicate reports and records being made for the branch manager.

This plan of branch office organization makes the function of branch managers supervisory rather than managerial. It is suitable only for certain types of organizations. In other organizations branch managers are given full authority, the only requirement being that they produce satisfactory profits.

To overcome the tendency of branches to get out of touch with home office policies and methods, it is usually necessary to employ a corps of **traveling supervisors** to advise and assist branch managers and to act as a connecting link between branch and home offices.

Form 7 is a form for monthly reports of branch office operations. It shows results for the current month and for the year to date compared with similar periods of the previous year.

Form 8 is a record of results obtained in individual salesmen's territories. It is arranged to show 3 years' figures on one 8½ x 11 card. Amounts for each month are posted in black and accumulative totals for the year are entered, in the same spaces, in red ink, above the figures for months. The reverse of this card is used for a record of sales analyzed by commodities.

The best method of **rewarding salesmen** is that which supplies the greatest incentive to persistent constructive work. Methods of paying salesmen are

Branch Office at .... Month of ....

		Same Month Last Year	Current Month	Last Year To Date	This Year To Date	Increase*
1	Quota					
2	Sales					
3	Gross Margin					
4	Salaries—Manager and Salesmen					
5	Expenses—Manager and Salesmen					
	Total Items 4 and 5					
	Per Unit					
6	Salaries of Office Force					
7	Office Rent					
8	Stationery and Printing					
9	Office Equipment, Heat, Light, etc.					
10	Telegrams and Telephones					
11	Postage					
12	Miscellaneous					
	Total Items 6 to 12					
	Per Unit					
13	Interest on Open Accounts					
14	Reserve for Bad Accounts					
15	State License and Taxes					
16	Cartage					
17	Storage					
18	Local Freight					
	Total Items 13 to 18					
	Per Unit					
	Total Items 4 to 18					
	Per Unit					
	Net Margin					

*Decrease in red.

FORM 7. Branch Office Report

Territory.................................. Salesman's Name.................................

Population............. Value Annual Agricultural Products..... Area................

No. Dealers............. " " Mining " ..... Per Capita Wealth....

No. Towns Over 5,000.... " " Manufactured " ....

Year 192—	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Quota...........												
Sales..............												
Gross Margin.....												
Transportation....												
Other Travel Exp..												
Salary...........												
Commission......												
Total Expense....												
Net Margin.......												
Cost per Unit.....												

Year 192—	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Quota...........												
Sales..............												
Gross Margin.....												
Transportation....												
Other Travel Exp..												
Salary...........												
Commission......												
Total Expense....												
Net Margin......												
Cost per Unit.....												

Year 192—	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Quota...........												
Sales..............												
Gross Margin.....												
Transportation..												
Other Travel Exp..												
Salary...........												
Commission......												
Total Expense....												
Net Margin.......												
Cost per Unit.....												

Form 8. Comparative Record of Salesman's Activities

(1) straight salary, (2) straight commission, (3) salary and commission. It is generally conceded that the **first method** is unsatisfactory in that the connection between income and results is too indirect to stimulate and sustain salesmen's enthusiasm and efforts. The **second plan** is still more undesirable because commission salesmen, as a rule, think only of immediate commissions and neglect development work that is necessary from the standpoint of the house that expects to continue in business.

The **salary-and-commission method** seeks to combine the desirable feature of the two others while eliminating the undesirable features. This plan is becoming generally accepted as the proper method of rewarding salesmen, but many firms hesitate to adopt it because of the difficulties met in determining the basis upon which commission should be paid. Various schemes have been developed for overcoming difficulties in the way of establishing equitable methods of figuring commissions. The **plan outlined** below is recommended by many authorities and brings out the points that require attention.

It is first necessary to know what the possibilities are in each territory, how much business a good salesman can secure. Quotas are then set. It is customary to fix quotas so that commissions are paid on sales above 80% of amounts set. A survey should then be made to determine the type of salesmen needed to represent the firm successfully in a constructive way and to discover the minimum such men need for living expenses, taking into account the cost of properly covering the territory. This minimum should be the salesman's **fixed salary** and his compensation for obtaining 80% of his quota.

Commission paid in addition to fixed salary may be based on volume or profits. A **common method** is to pay a certain percentage of sales in excess of the amount agreed on as covered by salary. **Another plan** is to make commissions dependent on profits in the salesman's territory by paying a percentage of profits and disregarding the question of volume altogether as a basis for commissions. Some firms, in addition to salary and commission, pay a **bonus** when quotas are attained. While most commission or quota schemes are based more or less upon arbitrary judgments, they can, by careful analysis of conditions, be made equitable, and it is of the utmost importance that there be no inequality or injustice in setting quotas or crediting sales.

One of the chief advantages of the salary-and-commission plan is elimination of argument over salary increases; quotas and basic salary having been agreed upon, reward depends entirely upon individual efforts and success. It is, of course, expected that sales in any territory will show a reasonable increase from year to year and quotas must be revised to conform to changed conditions. A system sometimes used to make these readjustments automatic provides that a salesman's salary and commission for this year is his salary for the next year and that his total sales this year becomes the basic minimum for next year, the same rate of commission being paid for sales over and above that minimum. In normal times this system is a satisfactory solution of the problem of fixing salaries and quotas but there is the danger that in a "boom" year they will be pushed up so high that quotas cannot again be reached while salaries will continue on an inflated basis until revised by a drastic cut which will have a depressing effect on the organization. It is probably better to leave basic salaries at the amount originally fixed and to revise quotas in accordance with some equitable and well-understood plan.

Contest plans and bonus schemes innumerable have been tried by one

concern and another for the purpose of stimulating salesmen to greater efforts, and in this connection it may be stated as a rule that systems that rely on honorable mention in bulletins, house-organs, etc., or other methods of giving personal distinction, while sometimes the only prizes that it is advisable to use, are not as effective with high-grade salesmen as some form of pecuniary reward.

TRAINING SALESMEN.—Modern standards of sales management require that each member of the selling organization be a trained salesman. To be well equipped for their work salesmen should have a thorough knowledge of the goods they are selling, should know how they are made, their uses and functions, points of superiority, and should be able to make a logical presentation of reasons for purchase. They should be familiar with house policies covering service, guaranty of quality, complaints, adjustments, credits, etc. In addition to specific knowledge of sales matters, and the principles of salesmanship, salesmen should be well grounded in general business principles; should know something about organization, advertising, credits, record-keeping, psychology.

There is undoubtedly some justification for the belief held by many sales managers that good salesmen are born, not made; but the supply of born salesmen falls far short of the demand, and as it is impossible to hire men completely trained to fit into the organization it is necessary to provide some special method of training. Much of the emotional writing that has been done in recent years in developing the theory that salesmanship is a matter of "pep" and "jazz," has been thoroughly discredited, together with the courses of training intended to transform salesmen into combination psychologists and hypnotists. Complete formal schools of selling are advocated by some authorities and have been established by some department stores and large specialty marketing organizations. The fact that there are not more such schools is due to the prevailing opinion that they are too expensive and too difficult to operate, that it is not easy to get the right type of men to run them, and that salesmen, after having been trained, are apt to leave the organization for better-paid positions offered on account of the training.

It is not always necessary that sales schools be complete in grades and classes. Where complete schools are not thought advisable, a great deal can be accomplished by "get-together" meetings Saturday afternoons, trips to headquarters, sales conventions, etc. Correspondence courses from the home office have, in some cases, given excellent results.

The tendency is toward more intensive training, to meet the need for better salesmanship brought about by more scientific purchasing methods and closer competition, and to standardize selling methods, which is impossible in a large organization without central training; and there will, undoubtedly, be many sales schools.

Where schools are operated, the plan should be to make admission a reward rather than a routine duty. New salesmen should not be given the advantage of special courses until they have had time to get acquainted with the firm's method of doing business and the management has had opportunity to pass judgment upon their loyalty and other qualifications. Men who seek employment only to obtain training and plan to leave it at the first opportunity should, if possible, be eliminated. Candidates should be required to show some natural ability in actual sales work under supervision of experienced salesmen preliminary to entering schools.

To avoid the demoralizing effect on students of getting something for noth-

ing, they should be required to contribute in some way toward defraying expenses of their education. This is sometimes accomplished by requiring them to purchase certain books used in the course of study. In other cases, salesmen are assessed directly for at least part of the cost of maintaining schools.

The entire burden of training in salesmanship should not be placed upon employers. Schools and colleges are now giving considerable attention to this subject and there are many opportunities for study of modern salesmanship open to persons ambitious to succeed in the selling field. Study of commodities handled and brief intensive training in the firm's methods and standards is, therefore, all that should be required of sales schools.

5. **THE ADVERTISING DEPARTMENT.**—It is the function of this department to find and use the best mediums for attracting attention of the public to the merchandise that the sales department is offering for sale, to educate the public in use of new products, to stimulate interest of possible buyers. While methods employed for this purpose are highly specialized, the work is very closely connected with that of the sales department. To obtain maximum results from advertising efforts it is necessary that salesmen and sales correspondents be fully informed regarding work being done by the advertising department and that they be alert to develop opportunities created by advertising. Complete knowledge of sales department plans is necessary for intelligent mapping of advertising campaigns. For this reason the sales manager usually has jurisdiction over the advertising department. The advertising manager consults with the sales manager in laying out campaigns, choosing mediums, and, in a general way, deciding upon the manner in which advertising appropriations are spent. Preparation of copy, securing space, letting contracts, checking results, etc., are in the hands of the advertising manager and his decisions should be considered as final on all technical matters.

Every effort should be made to secure close co-operation between sales and advertising departments and to co-ordinate their efforts. There are many possible points of contact. It is customary to provide salesmen with portfolios or albums containing specimens of current advertising for display to dealers as evidence of efforts being made to create consumer demand. Sales manuals should keep the salesmen in touch with advertising the house is doing and should contain instructions regarding the best way to make use of it. Other methods of obtaining mutual support and assistance, depending upon conditions, will suggest themselves as advertising plans are worked out.

The **size of this department** depends, not so much upon amounts of advertising appropriations, as upon methods of placing contracts for advertising. If mediums used are principally magazines having national circulation, and all details of preparation of copy and illustrations and contracting for space are turned over to advertising agencies, the advertising manager will have submitted, for his approval, complete plans for his campaign, and may need the assistance of only one or two clerks. On the other hand, advertising may be done in selected territories, making use of local mediums—newspapers, car cards, billboards, signs, window displays, etc. This may be elaborated by mail and follow-up work carried on by means of letters, circulars, booklets, catalogs, etc. If the advertising department handles all of these details, its staff may include copywriters and artists; clerks to prepare and check mailing lists, a section to keep records and to check bills for supplies, space and services, and results obtained from various forms of advertising; a storeroom for supplies, cuts, etc., files for data, clippings, etc. Duplication of form letters,

stenographic work, and correspondence filing may be done in the department or attended to by central service departments, depending upon the policy of the house.

Some advertising departments are further expanded to include canvassing crews, soliciting orders, and distributing advertising novelties and samples of merchandise from house to house or from store to store, although this is work that is usually considered to be within the sphere of sales department activities.

ORGANIZATION ADJUSTMENTS.—Activities of advertising departments are often subject to extreme fluctuations, expansion, or contraction, depending not upon volume of business as is the case with other departments, but upon market conditions and marketing policies. In forming a new department or enlarging a small department to enable it to handle an extensive campaign, the fundamental rules of organizations procedure should be applied. It is necessary to predetermine, as definitely as possible, what work is to be done and to assign the various operations to persons capable of performing them. Preliminary surveys should include systematic analysis of campaign plans and detailed written descriptions of operations needed to carry them on successfully. The total amount of work to be done can thus be estimated and classified according to types of work and qualifications required for its proper performance.

After the **provisional organization** has been in operation for a time and has become somewhat stabilized, it should be checked up by securing from employees detailed descriptions of tasks performed and of methods used. An adaptation of Figure 2 can be used for this purpose. Employees should be encouraged to describe methods they consider best. From information secured in this way and from study of departmental processes, there should be developed a set of standard practice instructions to record improved methods and to aid the manager in selecting and training new employees.

RECORDS.—To control advertising expense and to insure that plans are followed, **advertising appropriations are usually budgeted.** Definite amounts are set aside for certain purposes and all expenditures are made in accordance with and are controlled by the budget. This system requires the use of **records** designed to permit charging each item of expense against the appropriation made for the purpose for which the expense is incurred and to facilitate preparation of periodic statements displaying, for each item of the budget, amount of appropriation, amount expended, and unexpended balance. As supplies and services are often contracted for a considerable time before payment is made, this record, to show amount of free balances, must include a record of estimated cost of goods, space, etc., for which contracts have been entered into but for which payment has not been made. One firm uses a **form** having columns for date ordered, order number, ordered from, items, estimated cost, invoice date, cost, and as many distribution columns as are needed. A **separate record** is kept for each item of the budget.

It is usually necessary to carry a considerable stock of supplies, stationery, form letters, signs, display cards, advertising novelties, samples, etc., and an adequate **perpetual inventory record** is needed to properly account for this stock. The ordinary form of inventory record should be used. Cards should contain the usual information—location of supplies, amounts and dates ordered, received and issued and balance on hand, and should carry the usual notations as to maximum and minimum stocks.

Provision should be made for **filing** the wide variety of material used in connection with advertising work. Articles such as engravings, drawings,

cuts, electros, photographs, etc., which vary greatly in size and shape are usually stored in **special cabinets.** Catalogs and booklets are filed numerically in vertical files with alphabetic card indexes. Magazine articles, clippings, etc., may be filed alphabetically by subjects. Clippings having a permanent value should be mounted upon manila sheets.

A **data file** (see "Filing," p. 966) should be used for preserving and classifying information, suggestions, or ideas that may be useful for future advertisements.

To assist in making **intelligent choice of newspapers and magazines** as mediums, records should be compiled for every publication that may be used. **Card records** are commonly used for this purpose, with spaces for name of publication, publisher's name and address, territory covered, circulation, class, page and line rates, space and cash discounts, size of page, number of lines to page, number and width of columns, and for any technical information regarding cuts, etc., that it is desired to include. **Envelopes** are sometimes used instead of cards. Rates, etc., are posted on the outside and papers and statements regarding circulation, territory covered, etc., are placed inside.

Cards or **envelopes** are usually **filed alphabetically** by states and cities, with subdivision under each city for dailies, weeklies, monthlies, etc.

Records of experience with each publication should be kept so that use of unprofitable mediums may be discontinued. The purpose of this record is to show comparative unit costs, for different publications, of securing inquiries and orders. Advertising of the general consumer or good-will type can be checked up only in a general way, but where inquiries are solicited the value of each medium can be more definitely determined by keying the advertisements so that inquiries and orders can be credited, as they come in, to the publication from which they are drawn.

Systems of keying usually either employ coupons to be used in making inquiries or depend upon slight alterations of addresses, as: including Department A, Department B, etc., in addresses; changing street, room, and post-office box numbers; using the letters N., S., E., and W. in connection with street names. No system of keying gives absolute accuracy. The best that can be done is to secure fairly accurate reflections of tendencies. If considered advisable, postcards may be sent to persons from whom unkeyed inquiries are received, requesting the name of the publication in which the advertisement was read. This plan is seldom satisfactory and most concerns prorate unkeyed inquiries on the basis of properly keyed inquiries credited to each medium.

This record should include, for each publication, cost of advertisement, number of inquiries, number of orders, cost per inquiry, cost per order, average amount of orders, and ratio of sales to cost of advertising.

Purchases of equipment, supplies, printing, etc., should, whenever practicable, be made by the purchasing department. In the case of purchases made by itself, whether for material, services, or space, the advertising department should follow purchasing department procedure. **Regular purchase orders,** describing in detail the items ordered and s ating prices to be paid, should be issued for all purchases, and invoices should be checked and verified in the same way as those passing through the purchasing department. Invoices for space are sometimes paid before advertisements are printed and such invoices must be returned to the advertising department for final verification after payment has been made. To avoid **duplicate payments,** the auditing department should see that the invoices are stamped with voucher numbers before being returned.

6. ORGANIZATION OF THE ACCOUNTING DEPARTMENT.—Before the advent of present-day methods of management, the work of the accounting department was supposed to consist principally of making records of financial transactions and preparing formal balance sheets and profit and loss statements to display financial conditions at the end of certain periods and to reflect results of operations during those periods. These records and statements are, of course, necessary, and their importance has not diminished, but more emphasis is now laid on supplementary, interpretive statements, and reports. Plans and decisions of modern managements are based largely upon information furnished by accounting departments. This information is taken from books of account and from statistical records. It must be accurate and comprehensive. It should be arranged not only to assist executives in preparing plans for the future, but should also show results obtained in carrying out plans and cost of obtaining results, and should measure the performance of each individual charged with responsibility for part of the business activities. It is by use of such statements that executives are able to keep in touch with operations, fix responsibility for mistakes or inefficient methods, and correct dangerous tendencies before serious damage is done.

The **chief accounting executive,** in order to control the accuracy and completeness of statements and reports for which he is responsible, must exercise authority over all accounting records and statistics whether at the general office, branch offices, or factories, and must direct the work of all clerks engaged in originating or compiling records that are in any way used as the basis for entries in books of account or for accounting statements or reports.

Final control of accounting should be exercised by an officer of the firm, responsible only to the president and the board of directors. His title is not important and is different in different organizations. In some businesses, supervision of accounting is combined with direction of financial matters under control of the **treasurer.** The better plan is to have a separate independent accounting department in charge of an officer who is not directly interested in other departments. The organization of this department varies, of course, with the size and nature of the business. In a large business, it may be in charge of an officer known as **comptroller,** who is one of the principal executives of the firm, who plans accounting methods and interprets accounting reports, and who delegates active supervision of the work of the department to a subordinate who may be called assistant comptroller, general accountant, general auditor, or otherwise designated, and the work may be divided into numerous sections each in charge of a subexecutive. In a smaller business all accounting work may be handled by a head bookkeeper and a few clerks. In either case, the same principles apply. The head of the accounting department should be without responsibility for results obtained by other departments, so that investigations and reports are unbiased, and should have control of sources of information, so that he can be held responsible for the reliability of records and statements.

As the necessary information is gathered from all parts of the organization, much of it will be prepared by persons under the direct authority of other executives, but in so far as their work concerns accounting matters, they should be subject to directions by the accounting executive. The small concern may not find it necessary or expedient to maintain or prepare as many or as elaborate records and statements as are used by a large business, but the ground to be covered and the principles involved are practically the same. The following discussion will consider the divisions of accounting work in a representative manufacturing business, in which the accounting department is

supervised by an executive called "general auditor" who is responsible to the comptroller.

DIVISIONS OF THE DEPARTMENT.—Like most other details of organization, the sections into which a department should be divided depend upon existing conditions. They should be arranged to group, under minor executives, those functions that logically form working units. The following list of sections is illustrative only and is not recommended for use in any particular organization. Many details handled by this department are not mentioned in this outline. Further subdivision may be made, or two or more of these sections may be combined as seems desirable or expedient in any case.

1. General Bookkeeping
2. Cost Accounting
3. Stores Records
4. Finished Stock Records
5. Customers' Accounts
6. Vouchers Payable
7. Pay-Rolls
8. Invoicing
9. Tabulating
10. Auditing

General Bookkeeping Section.—In this section the information compiled and used by all other sections is summarized and controlled. The general bookkeeping section controls the general ledger, subsidiary ledgers for fixed assets, for miscellaneous accounts receivable, and any other subsidiary ledgers not assigned to a separate section, and the journals used as posting mediums to the general ledger. It prepares vouchers for monthly distributions of fixed charges to the various departments and branches, approves the distribution to general ledger accounts, of vouchers made in other sections and prepares trial balances and other statements for use of the general auditor.

Cost Accounting Section.—The cost accounting section maintains records of factory operations—factory ledger, cost sheets, etc., and prepares such statements of cost details and analysis of factory expenses as are required. Its records are controlled by the Factory Ledger account on the general ledger. This section distributes labor and material costs and apportions factory expenses to the various jobs in process and prepares monthly journal vouchers for use of the general bookkeeping section in recording factory operations on the general books.

Determination of costs of finished goods is only part of the work of the cost accounting section. Records maintained by this section should also show the cost of different operations or processes. Comparative efficiency of different departments of the factory, comparison of results obtained by use of different equipment or methods (as, for example, if new methods or new machines are installed, these records should show whether or not the change has resulted in more economical operation), and detailed analysis of factory expense for use of the management in judging past performance and making plans for the future.

Stores Records.—These are perpetual inventory records of raw materials and are kept in the stores department, but the procedure followed is subject to the approval of the general auditor and monthly statements of material purchased, issued, and on hand are made for his use.

Finished Stock Records.—These are also perpetual inventory records and are controlled by the Finished Goods account on the general ledger. They show the location and cost of all stocks of finished goods, whether at the factory, at branches, or on consignment. These records are charged with the output of the factory and it is the duty of this section to see that all

movements of stock are properly authorized and recorded and that all withdrawals from stock are properly accounted for. Stock reports received from branch offices and other stock points are reconciled with records kept in this section, and adjustments and corrections are secured when necessary. Monthly inventories showing the quality and location of stocks of each kind and grade of product are made by this section.

Customers' Accounts.—This section operates ledgers containing customers' accounts handled directly by the general office. Accounts of branch office customers are usually kept at the branches and controlled by the general ledger. If branch office collections are handled by the general office, this section will have a ledger for each branch.

Frequent reference to customers ledgers is necessary in credit work and they should be placed where the credit department can have convenient access to them. This section must co-operate with the credit department, supplying whatever statements or other information is required from these records.

The use of bookkeeping machines in this section is usually recommended. The work consists principally of posting, taking off trial balances, and writing monthly statements. Where posting is done by hand, the accuracy of the work is not proved until the end of the month and considerable time is often lost in checking for balances. Customers' statements are also prepared at the end of the month and are often mailed several days late. With bookkeeping machines the day's work can be proved each day. Statements are prepared as the posting is done and are ready for mailing when the last posting for the month has been made. There is no congestion of work around the first of the month, with resulting delay of posting. For further discussion of bookkeeping machines, see "Mechanical Equipment," p. 961.

Vouchers Payable.—It is the duty of this section to voucher all invoices, to distribute vouchers to the proper accounts in the vouchers payable record, and to prepare for the treasurer's signature, checks in payment of the vouchers.

Incoming invoices are sent to this section when approved for payment and, after entries have been made on the voucher record, are filed in the **unpaid voucher file** until the time for payment arrives.

At the end of each month a **journal voucher,** summarizing the information classified in the voucher record, is made and sent to the general bookkeeping section for entry on the general ledger. Unpaid items in the voucher record are listed and the total agreed with the balance of the general ledger controlling account. The **paid vouchers file** and the **voucher index** may be kept in this section or be maintained by the central filing department.

Pay-Roll Section.—This section, sometimes known as the timekeeping section, controls the recording of "in and out" time in the factory, maintains records of rates paid factory employees, extends time cards, and prepares pay-rolls. It also prices and extends labor tickets for use by the cost department. Pay-rolls completed in this section are turned over to the treasurer's department which attends to preparation and distribution of pay checks or pay envelopes.

Invoicing Section.—Copies of shipping orders, priced by the sales department, are sent to this section as soon as shipment has been made. The invoicing section makes extensions and prepares invoices to be sent to customers. Copies of invoices are made for the statistical and the customers' accounts sections. In some offices, credit and sales departments also receive copies.

Invoicing should be done promptly. If possible, invoices should be

mailed the same day that the goods are shipped and never later than the following day. Success of the sales department's efforts to build up good-will depends to a large extent upon the service the concern is able to give, and in this respect prompt rendering of invoices may be as important as prompt shipment, as customers may not be able to use the goods until they have invoices to cover. Where bills of lading are attached to drafts, customers cannot obtain possession of goods until draft is paid and unnecessary delay in forwarding drafts is certain to be resented. No business can afford to be careless in the matter of invoicing. Inaccurate or carelessly typed invoices create an impression of unreliability that is difficult to overcome. Extensions should be carefully checked and before invoices are mailed they should be inspected for typographical errors and general appearance.

Billing machines that make extensions and figure discounts automatically help to speed up the work in this section. There are, however, some kinds of involved billing which these machines do not seem to be able to handle successfully.

Tabulating Section.—By the use of electrical tabulating machines (described under "Mechanical Equipment," p. 403), this section makes reports showing all statistical information required from sales invoices and purchase invoices. Material requisitions and labor tickets are also classified for entry on the cost records. Final proof of the accuracy of extensions on invoices can be made with these tabulating machines, but that is practicable only where the average amount of invoices is large.

Auditing Section.—In large organizations the head of this section should report directly to the comptroller and be on a par with the executive in charge of accounting work, who in such cases is usually known as chief accountant. This section has general charge of accounting inspection. It audits vouchers payable, branch office disbursements, pay-rolls, bank accounts, cost records, and stock records, and in addition to this routine work makes special audits and investigations at the direction of the general auditor or the comptroller. Traveling auditors, who visit branch offices to verify records and check accounting procedure, are members of this section.

Intersectional Relations.—While the duties of each section may be more or less clearly defined, no section is an independent unit. The work of the various sections is closely related and requires co-operation and exchange of information. As delay in one section may hold up the work of other sections, transfers of such information should be governed by a definite schedule Dates should be set for completion of journal vouchers and reports on which the information compiled in each section is summarized and classified, so that responsibility for delays may be definitely fixed.

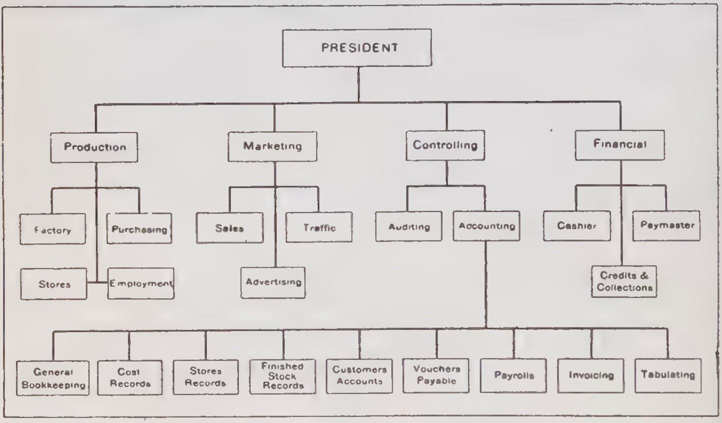
The routine of the accounting department is closely connected with other divisions of the general office work. The credit department depends for up-to-date information regarding the status of customers' accounts upon prompt posting of invoices and collections. Other points of contact are formed by the comptroller's responsibility for stores records maintained in the production department, for shipping department procedure, and for methods used by other departments in handling matters over which he has functional control.

Duties of Comptroller.—The **comptroller** is the final authority on accounting methods and procedure. He plans the classification of accounts and the supporting records, and arranges for the preparation of statements and reports required by law or by other departments, or necessary to show the

condition and progress of the business. He explains and interprets accounting reports for the executive officers of the firm and makes recommendations based on the information contained in these reports.

The comptroller is responsible for safeguarding the assets of the firm by designing records to show the responsibility of individuals for property or values intrusted to their care and by arranging for periodical inspections and investigations to verify the existence of assets as shown by his records.

Maintenance of records and preparation of reports, after they have been planned and authorized by the comptroller, is under the direction of the



FORM 9. Analysis of Business Activities

general auditor. He supervises the work of all employees of the department, decides questions regarding methods and details of making entries, etc., and passes upon suggestions for changes in methods or forms in use.

Many **organization charts** divide business activities into three fundamental groups: marketing, production, and finance, and locate the accounting department within the finance group. The position of the accounting department in an organization in which the modern idea of the existence of a fourth primary function—"controlling"—is recognized, is shown by Form 9.

SECTION 20

BANKRUPTCY, INSOLVENCY, AND RECEIVERSHIP

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 20

BANKRUPTCY, INSOLVENCY, AND RECEIVERSHIP

Bankruptcy

BANKRUPTCY DEFINED.—The term "bankruptcy" denotes: (1) the state of being unable to pay, or of being legally discharged from paying one's debts; or (2) the act or process of becoming a bankrupt.

BANKRUPT DEFINED.—A bankrupt is a debtor who, in accordance with the terms of the law relating to bankruptcy, has been judicially declared to be unable to meet his debts.

SOURCE OF BANKRUPTCY LAWS.—Bankruptcy laws are a development of the English common law of the Middle Ages. The earlier laws, according to Blackstone, merely protected the creditor against the "trader" who secreted himself or acted to defraud his creditors. These laws did not release the debtor from his debts. Consequently property subsequently acquired by the debtor might still be seized for debts that remained unpaid.

In 1705, during the reign of Queen Anne, however, the English law was amended to provide for the debtor's discharge from the unpaid portion of his debts. Since then bankruptcy laws generally have provided relief to debtors as well as protection to creditors.

It was not until the passage of the Bankruptcy Act of 1861 that English Law abolished the distinction between traders and non-traders; that is, theretofore none but traders could be bankrupts, non-traders being "insolvents." This distinction between traders and non-traders has been ignored in the United States since the Act of 1841.

DISTINGUISHED FROM INSOLVENCY.[1]—The prevailing laws of both insolvency and of bankruptcy are designed to effect a fair distribution of the property of debtors among creditors. Many other conditions are common to both these laws. The Supreme Court of the United States considers the two terms, insolvency and bankruptcy, as practically synonymous. Yet bankruptcy laws discharge absolutely debtor and debt, whereas insolvency laws, intended originally to discharge the person of the debtor from arrest and imprisonment, leave his obligation to pay in full force.

The **Bankruptcy Act**, being a federal law, applies uniformly throughout the states; **insolvency laws**, being state laws, vary in their scope and operation. The Bankruptcy Act is paramount to state legislation.

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[1] See "Insolvency," *infra*.

The several states have power to pass insolvency laws, which may have the general effect of bankruptcy laws, except that such laws may not impair the obligation of contracts, nor conflict with an act of Congress.

ACT OF 1898.—Congress is empowered by the Constitution (Art. 1, Sec. 8, Cl. 4) "to establish uniform laws on the subject of bankruptcies throughout the United States." The Congress has enacted four bankruptcy laws: the Act of 1800, repealed in 1803; the Act of 1841, repealed in 1843; the Act of 1867, repealed in 1878; and the Act of 1898, generally amended in 1903, 1906, and 1910, which continues in force and is now the law.

The Act of 1898, together with (1) its amendments, (2) certain General Orders adopted by the Supreme Court of the United States, and (3) the equity rules of that court, comprises that portion of our federal law generally referred to as the Bankruptcy Act or the Bankruptcy Law.

The accountant may not be directly concerned with the purely legal phases of the act, which are within the province of the lawyer; yet he may not be able to serve a bankrupt or insolvent client efficiently unless he is familiar with the basic principles of the act, and the practice of the courts. Reference to such authoritative works as those of Remington, Loveland, or Collier will repay the accountant engaged in bankruptcy proceedings. For convenience, however, certain controlling phases of the law and procedures are hereinafter explained.

PETITIONS.—Certain **prescribed forms** are used in petitioning the court in all bankruptcy proceedings. Printed copies of these forms may be obtained from stationers. Several of the more important forms, with which accountants should be familiar, are outlined in succeeding paragraphs.

VOLUNTARY AND INVOLUNTARY BANKRUPTCY.—A debtor is a voluntary bankrupt or an involuntary bankrupt according as **he** or **his creditors** petition the court that he be adjudged a bankrupt. If this petition is filed by the debtor, the proceeding is voluntary. If filed by creditors, the proceeding is involuntary.

A debtor, within the meaning of the law, may be an individual, a partnership, or a corporation.

DEBTOR'S PETITION.—The petition of an individual debtor is reproduced in Form 1. The petition of a debtor partnership or corporation is substantially the same as for an individual. The wording is changed slightly merely to identify the partnership or the corporation, as the case may be. In case of partnerships, a full set of schedules is required for each partner involved.

To the Hon Judge of the District Court of the United States for the District of

The Petition of

of the of , in the County of

and District and State of

State Occupation or Profession

Respectfully Represents: That he has had his principal place of business [*or has resided or has his domicile*] for the greater portion of six months next immediately preceding the filing of this Petition at within said Judicial District; that he owes debts which he is unable to pay in full; that he is willing to surrender all his property for the benefit of his creditors, except such as is exempt by law, and desires to obtain the benefit of the Acts of Congress relating to Bankruptcy.

That the Schedule hereto annexed, marked A, and verified by your petitioner's oath, contains a full and true statement of all his debts, and (so far as it is possible to ascertain) the names and places of residence of his creditors, and such further statements concerning said debts as are required by the provisions of said Acts.

That the Schedule hereto annexed, marked B, and verified by your petitioner's oath, contains an accurate inventory of all his property, both real and personal, and such further statements concerning said property as are required by the provisions of said Acts:

Wherefore, your Petitioner Prays: that he may be adjudged by the Court to be a bankrupt within the purview of said acts.

_______________________________ *Petitioner.*

_______________________________ *Attorney for Petitioner.*

United State of America,
District of } ss.
County of

I, , the petitioning debtor mentioned and described in the foregoing Petition, do hereby make solemn oath that the statements contained therein are true, according to the best of my knowledge, information and belief.

Subscribed and sworn to before me this ________ } ____________________. Petitioner
day of ____________ A. D., 19 } ____________________

____

____________________ Official Character.

N. B.—Oaths to the above petition, and the schedules thereto annexed, may be administered by officers authorized to administer oaths in proceedings before Courts of the United States, or under the laws of the State where the same are to be taken; and diplomatic or consular officers of the United States in any foreign Country.
Petitioner's attorney cannot act as notary.

FORM 1. Petition in Bankruptcy

Statement of all Debts of Bankrupt.

SCHEDULE A. (1) No.———

Statement of all creditors who are to be paid in full or to whom priority is secured by law.

CLAIMS WHICH HAVE PRIORITY.		AMOUNT Dollars.	Cents.
1. Taxes and debts due and owing the United States.			
2. Taxes due and owing to the State of or to any County, District or Municipality thereof.			
3. Wages due workmen, Clerks or Servants, to an amount not exceeding $300 each, earned within three months before filing the petition.			
4. Other Debts having priority by law.			

Insert in all cases, ledger page, names of creditors and their residence, if known, or unknown, so state, when and where debt was contracted; nature and consideration of the Debt, and whether contracted as partner or joint contractor, and, if so, with whom.

TOTAL———

.... Petitioner.

This Schedule must be executed in triplicate.

SCHEDULE A. (2) No.______

CREDITORS HOLDING SECURITIES

(N. B.—Particulars of Securities held, with dates of same, and when they were given, to be stated under the names of the several Creditors, and also particulars concerning each Debt, as required by the Acts of Congress relating to Bankruptcy, whether contracted as partner or joint-contractor with any other person; and if so, with whom.)

	VALUE of SECURITIES		AMOUNT of DEBTS	
	Dollars.	Cents.	Dollars.	Cents.

Insert in all cases, ledger page, names of creditors and their residence if known, if unknown, so state; also full description of securities, when and where debts were contracted.

This Schedule must be executed in triplicate.

TOTAL...

.... Petitioner.

SCHEDULE A. (3) No.______

CREDITORS WHOSE CLAIMS ARE UNSECURED

(N. B.—When the name and residence (or either) of any drawer, Maker, Endorser or Holder of any Bill, or Note, etc., are unknown, the facts must be stated; and also the name and residence of the last Holder known to the Debtor. The Debt due to each Creditor must be stated in full, and any claim by way of Set-off stated in the Schedule of Property.)

	AMOUNT	
	Dollars.	Cents.

Insert in all cases, ledger page, names of creditors and their residence, if known or unknown, so state, when and where debt was contracted; nature and consideration of the Debt, and whether any Judgment, Bond, Bill of Exchange, Promissory Note, Etc., and whether contracted as partner or joint contractor or with any other person; and if so, with whom.

This Schedule must be executed in triplicate.

TOTAL...

.... Petitioner.

SCHEDULE A. (3 continued) No.________

CREDITORS WHOSE CLAIMS ARE UNSECURED

(N. B.—When the name and residence (or either) of any drawer, Maker, Endorser or Holder of any Bill, or Note, etc., are unknown, the facts must be stated; and also the name and residence of the last Holder known to the Debtor. The Debt due to each Creditor must be stated in full, and any claim by way of Set-off stated in the Schedule of Property.)

	AMOUNT Dollars.	Cents.

Insert in all cases, ledger page, names of creditors and their residence, if known or unknown, so state, when and where debt was contracted; nature and consideration of the Debt, and whether any Judgment, Bond, Bill of Exchange, Promissory Note, Etc., and whether contracted as partner or joint contractor or with any other person; and if so, with whom.

This Schedule must be executed in triplicate.

TOTAL________

________________ Petitioner.

In supplying information as to "when and where" debts due merchandise creditors were contracted, and the "nature and consideration of the debt," it is usually sufficient to state merely:

"Merchandise creditors, as follows:
Jno. V. Smith Co., 96 Branch St., Bontown, N. Y. $2,750.00
Wm. Smith Co.. 97 Main St., Bontown, N. Y. 3,750.00
Etc."

SCHEDULE A. (4) No.______

LIABILITIES ON NOTES OR BILLS DISCOUNTED, WHICH OUGHT TO BE PAID BY THE DRAWERS, MAKERS, ACCEPTORS OR ENDORSERS.

(N. B.—The dates of the Notes or Bills, and when due, with the Names, Residences, and the Business or Occupation of the Drawers, Makers or Acceptors thereof are to be set forth under the Names of the holders. If the Names of the Holders are not known, the Name of the last Holder known to the Debtor shall be stated and his business and place of residence. The same particulars as to Notes or Bills on which the Debtor is liable as Endorser.)

	AMOUNT Dollars.	Cents.

Insert in all cases, ledger page, names of holders as far as known, if unknown, so state; their residence if known, if unknown so state; place where debt was contracted; nature of liability, whether same was contracted as partner or joint contractor, or with any other person; and if so, with whom.

TOTAL______________

______________ Petitioner.

This Schedule must be executed in triplicate.

SCHEDULE A. (5) No.______

ACCOMMODATION PAPER.

(N.B.—The dates of the Notes or Bills, and when due, with the Names and Residences, of the Drawers, Makers and acceptors thereof, are to be set forth under the Names of the holders; if the bankrupt be liable as Drawer, Maker, Acceptor or Endorser thereof; it is to be stated accordingly. If the names of the Holders are not known, the Name of the last Holder known to the Debtor should be stated, with his residence. The same particulars as to other commercial paper.)

	AMOUNT Dollars.	Cents

Insert in all cases, ledger page, names of holders, residence, if known, if unknown, so state; names of and residence of persons accommodated; place where contracted; whether liability was contracted as partner or joint contractor, or with any other person, and if so, with whom.

TOTAL______________

This Schedule must be executed in triplicate.

______________ Petitioner.

N. B.—The following form of Oath to Schedule A of the Petition by Debtor is prescribed and is to be annexed to the same.

OATH TO SCHEDULE A.

United States of America
District of } ss.

On this day of A. D. 19

before me personally came

the person mentioned in and subscribed to the foregoing Schedule, and who, being by me first duly sworn, did declare the said Schedule to be a statement of all his debts, in accordance with the Acts of Congress relating to Bankruptcy.

Subscribed and sworn to before me this ______ day of

______ A. D. 19 . ______

______
(Official Character.)

This oath may be administered by officers authorized to administer oaths in proceedings before Courts of the United States or under the laws of the State where the same are to be taken; and diplomatic or consular officers of the United States in any foreign country.

Petitioner's attorney cannot act as notary.

SCHEDULE B. (2) No.______

PERSONAL PROPERTY

		AMOUNT Dollars.	Cents
A. Cash on hand.			
B. Bills of exchange. Promissory notes or securities of any description (each to be set out separately)			
C. Stock in trade in______ business of ______ ______ at ______ ______ of the value of ______			
D Household goods and furniture, household stores, wearing apparel and ornaments of the person, viz:			
E. Books, prints and pictures, viz:			
F. Horses, cows, sheep and other animals with number of each viz.			
G. Carriages and other vehicles, viz:			
H. Farming stock and implements of husbandry, viz:			
I. Shipping and shares in vessels, viz:			
K. Machinery fixtures, apparatus and tools used in business, with the place where each is situated, viz			
L. Patents, copyright and trade marks, viz			
M Goods or personal property of any other description with the place where each is situated, viz:			

This Schedule must be executed in tripli

SCHEDULE B. (1) No.______

Statement of all Property of Bankrupt.

REAL ESTATE.

	ESTIMATED VALUE Dollars	Cents

Insert in all cases, location and description of all real estate owned by debtor or held by him; incumbrances thereon, if any, and dates thereof; statement of particulars relating thereto.

TOTAL ______

This Schedule must be executed in triplicate. ______ Petitioner.

SCHEDULE B. (3) CONTINUED

CHOSES IN ACTION.

	Description and Amount	Amount Dollars	Cents
B.—Stock in incorporated Companies. Interest in Joint Stock Companies, and Negotiable Bonds.			
C.—Policies of Insurance.			
D.—Unliquidated Claims of every nature with their estimated value.			
E.—Deposits of money in banking institution and elsewhere.			

This Schedule must be execu

SCHEDULE B. (3)

CHOSES IN ACTION.

	Description and Amount	Amount Dollars.	Cents.
A.—Debts due Petitioner on open account.			

TOTAL ____________

____________ Petitioner.

This Schedule must be executed in triplicate.

SCHEDULE B. (4) No.______

Property in Reversion, Remainder or Expectancy, including Property held in Trust for the debtor, or subject to any, Power or Right to Dispose of, or to Charge

N. B.—A particular description of each interest must be entered. If all or any of the Debtor's Property has been conveyed by Deed or Assignment, or otherwise, for the benefit of Creditors, the date of such Deed should be stated, the name and address of the person to whom the property was conveyed, the amount realized from the proceeds thereof, and the disposal of the same, as far as known to the Debtor.

GENERAL INTEREST	PARTICULAR DESCRIPTION	SUPPOSED VALUE OF MY INTEREST. Dollars.	Cents.
Interest in Land.			
Personal Property.			
Property in Money, Stocks, Shares, Bonds, Annuities, etc.			
Rights and Powers, Legacies and Bequests.	TOTAL.		
		Amount Realized from Proceeds of Property Conveyed. Dollars.	Cents
PROPERTY HERETOFORE CONVEYED FOR BENEFIT OF CREDITORS What portion of Debtor's property has been conveyed by Deed or Assignment, or otherwise for benefit of Creditors; date of such Deed, name and address of party to whom conveyed, amount realized therefrom, and disposal of same, so far as known to the Debtor.			
What sum or sums have been paid to Counsel, and to whom, for service rendered or to be rendered in this Bankruptcy.			

TOTAL ______

______ Petitioner.

This Schedule must be executed in triplicate.

SCHEDULE B. (6) No. ______

BOOKS, PAPERS, DEEDS AND WRITINGS RELATING TO BANKRUPT'S BUSINESS AND ESTATE.

The following is a True List of all Books, Papers, Deeds and Writings relating to my Trade, Business, Dealings, Estate and Effects, or any part thereof, which at the date of this Petition, are in my possession or under my custody and control, or which are in the Possession or Custody of any Person in Trust for me, or for my Use, Benefit, or Advantage; and also of all others which may have been heretofore, at any time in my Possession, or under my custody or Control, and which are now held by the parties whose names are hereinafter set forth, with the reason for their custody of the same:

Books,	
Deeds,	
Papers, Etc.	

This Schedule must be executed in

SCHEDULE B. (5) No. ______

A Particular Statement of the property claimed as exempted from the operation of the Acts of Congress relating to Bankruptcy, giving each item of property and its valuation; and if any portion of it is Real Estate, its location, description and present use.

		VALUATION, Dollars.	Cents.
Military Uniforms, Arms and Equipments.			
Property claimed to be exempted by State laws; its valuation; whether real or personal; its descriptions, and present use; and reference given to the Statute of the State creating the exemption.			

TOTAL ______

______ Petitioner.

This Schedule must be executed in triplicate.

N. B.—The following form of Oath to Schedule B of the Petition by Debtor is prescribed and is to be annexed to the same.

OATH TO SCHEDULE B.

United States of America } ss.
District of

On this day of A. D. 19

before me personally came

the person mentioned in and subscribed to the foregoing Schedule, and who, being by me first duly sworn, did declare the said Schedule to be a statement of all his Estate, both real and personal, in accordance with the Acts of Congress relating to Bankruptcy.

Subscribed and sworn to before me this ______ day of

______ A. D. 19 ______

______
(Official Character.)

This oath may be administered by officers authorized to administer oaths in proceedings before Courts of the United States or under the laws of the State where the same are to be taken; and diplomatic or consular officers of the United States in any foreign country

Petitioner's attorney cannot act as notary

Summary of Debts and Assets

From the Statements of the Bankrupt in Schedules A and B.

Schedule A 1 (1) Taxes and Debts due United States.				
" " 1 (2) Taxes due States, Counties, Districts & Municipalities.				
" " 1 (3) Wages.				
" " 1 (4) Other Debts preferred by Law.				
" " 2 Secured Claims.				
" " 3 Unsecured Claims.				
" " 4 Notes and Bills which ought to be paid by other parties thereto.				
" " 5 Accommodation Paper.				
Schedule A, total				
Schedule B 1 Real Estate.				
" " 2-a Cash on hand				
" " 2-b Bills, Promissory Notes and Securities.				
" " 2-c Stock in Trade.				
" " 2-d Household Goods, &c.				
" " 2-e Books, Prints and Pictures.				
" " 2-f Horses, Cows and other animals.				
" " 2-g Carriages and other Vehicles.				
" " 2-h Farming Stock and Implements.				
" " 2-i Shipping and Shares in Vessels.				
" " 2-k Machinery, Tools, &c.				
" " 2-l Patents, Copyrights and Trade-marks.				
" " 2-m Other Personal Property.				
" " 3-a Debts due on Open Accounts.				
" " 3-b Stocks, Negotiable Bonds, &c.				
" " 3-c Policies of Insurance.				
" " 3-d Unliquidated Claims.				
" " 3-e Deposits of Money in banks and elsewhere.				
" " 4 Property in Reversion, Remainder, Trust, &c.				
" " 5 Property claimed to be exempt.				
" " 6 Books, Deeds and Papers.				
Schedule B, total				

This Schedule must be executed in triplicate.

_______________________________ Petitioner.

CREDITORS' PETITION.—In involuntary bankruptcy the petition in the first instance is filed by one or more creditors. Creditors cannot petition unless they have provable claims aggregating $500 in excess of securities. One creditor can petition if there are less than twelve creditors, otherwise three creditors must unite in the petition.

Their petition is substantially as follows:

TO THE HONORABLE... *Thomas Maillam*...., Judge of the District Court of the United States for the.. .*Western*....District of....*New York*....:

THE PETITION OF....*A. B. Sea & Company, R. D. Ferson and J. L. Wilmot*....respectfully shows:

THAT....*K. G. Namer*...., of....*Bontown, New York*...., has for the greater portion of six months next preceding the date of filing this petition, ...*had his principal place of business*....at....*609 Broad Street, Bontown, New York*...., in the County of....*Independence*...., and State and District aforesaid, and owes debts to the amount of....*$1,000*....

THAT YOUR....*petitioners are creditors*....of said....*K. G. Namer*...., having provable claims amounting in the aggregate, in excess of securities held by....*them*...., to the sum of....*$500*.... That the nature and amount of your....*petitioners'*....claims are as follows:

...*A. B. Sea & Company—machinists' supplies furnished—balance due $300*....

....*R. D. Ferson—paint furnished—balance due $150*....

....*J. L. Wilmot—automobile hire—balance due $210*....

AND YOUR....*petitioners*....further....*represent*....that said....*K. G. Namer*....is insolvent, and that within four months next preceding the date of this petition the said....*K. G. Namer*....committed an act of bankruptcy, in that....*he*....did heretofore, to wit, on the....*tenth*....day of....*December*....A. D.....19—...., pay to....*C. T. Selarch*...., the sum of....*Two Hundred ($200)*....Dollars, with intent while insolvent to prefer said creditor over others.

WHEREFORE, YOUR ..*petitioners pray*.. that service of this petition, with a subpoena, may be made upon....*K. G. Namer*...., as provided in the acts of Congress relating to bankruptcy, and that....*he*....may be adjudged by the Court to be a bankrupt within the purview of said acts.

....*A. B. Sea & Company*....
....*R. D. Ferson*............
... *Ralph Wier Grover*.... ....*J. L. Wilmot*.............
Attorney. Petitioners.

NOTE: To be acknowledged in joint jurat by all petitioners before an authorized official.

FORM 2. Creditors' Petition

Within 10 days after filing of creditors' petition the alleged bankrupt is required to file detailed schedules in precisely the same manner and form as in case of voluntary bankruptcy.[2]

WHO MAY BECOME BANKRUPTS.—Any person capable of contracting, except a municipal, railroad, insurance, or banking corporation, who owes debts, one or more, may become a voluntary bankrupt. See section on "Credits and Collections." Any natural person or corporation, except a wage-earner,

[2] See "Debtor's Petition," *supra.*

a farmer, or a municipal, railroad, insurance, or banking corporation, may be adjudged an involuntary bankrupt; provided, however, that the debtor owes at least $1,000. See section on "Credits and Collections."

Partners, partnerships, and private banks may be adjudged bankrupts, but state or national banks, municipal, railroad, and insurance corporations are governed by special statutes.

BANKRUPT'S EXEMPTIONS.—The Bankruptcy Act provides for the exemptions specified in the statutes of the state in which the bankrupt resides. The statutes of the state in question should be consulted for these exemptions.

ACTS OF BANKRUPTCY.—There are five so-called "acts of bankruptcy," one or more of which must be proved before a person is declared a bankrupt. These acts occur when the debtor:

1. Conveys, transfers, conceals or removes, or permits to be concealed or removed, any part of his property with intent to hinder, delay, or defraud his creditors or any of them. The intent to defraud creditors is the essence of this act of bankruptcy.
2. Transfers, while insolvent, any portion of his property to one or more of his creditors with intent to prefer such creditor over his other creditors. The intent to favor one or more creditors to the exclusion of others is the essence of this second act of bankruptcy.
3. Having suffered or permitted, while insolvent, any creditor to obtain a preference through legal proceedings, and not having vacated or discharged such preference at least 5 days before final disposition of any property affected by such preference. This act is termed the **passive act.** The debtor commits no act; he merely permits one or more creditors to proceed to the disadvantage of other creditors.
4. Makes a general assignment for the benefit of creditors, or, being insolvent, has a receiver or trustee put in charge of his property under the laws of a state. If an assignment is for a valid consideration, or unless insolvency can be affirmatively proved, this act is not committed.
5. Admits in writing his inability to pay his indebtedness and his willingness to be adjudged a bankrupt on that ground. Admission alone is sufficient here.

DUTIES OF A BANKRUPT.—The bankrupt shall:

1. Attend the first meeting of his creditors, if directed by the court or a judge thereof to do so, and the hearing upon his application for a discharge, if filed.
2. Comply with all lawful orders of the court.
3. Examine the correctness of all proofs of claims filed against his estate.
4. Execute to his trustee transfers of all his property in foreign countries.
5. Execute and deliver such papers as shall be ordered by the court.
6. Immediately inform his trustee of any attempt, by his creditors or other persons, to evade the provisions of this Act coming to his knowledge.
7. In case of any person having to his knowledge proved a false claim against his estate, disclose that fact immediately to his trustee.
8. Prepare, make oath to, and file in court within 10 days, unless further time is granted, after the adjudication, if an involuntary bankrupt, and with the petition if a voluntary bankrupt, a schedule of his property, showing the amount and kind of property, the location thereof, its money value in detail and a list of his creditors, showing their residence if known, if unknown, that fact to be stated, the amounts due each of them, the consideration thereof, the security held by them, if any, and a claim for such exemptions as he may be entitled to,

all in triplicate, one copy of each for the clerk, one for the referee, and one for the trustee.

9. When present at the first meeting of his creditors, and at such other times as the court shall order, submit to an examination concerning the conducting of his business, the cause of his bankruptcy, his dealings with his creditors and other persons, the amount, kind, and whereabouts of his property, and, in addition, all matters which may affect the administration and settlement of his estate; but no testimony given by him shall be offered in evidence against him in any criminal proceeding.

Provided, however, that he shall not be required to attend a meeting of his creditors, or at or for an examination at a place more than 150 miles distant from his home or principal place of business, or to examine claims except when presented to him, unless ordered by the court, or a judge thereof, for cause shown, and the bankrupt shall be paid his actual expenses from the estate when examined or required to attend at any place other than the city, town, or village of his residence.

SCHEDULES OF BANKRUPT.—The courts require accuracy and completeness in preparation of schedules. The care to be exercised in their preparation is not, however, so much a display of accounting technique as of legal technique. Details concerning creditors, properties, exemptions, and related matters must be stated, but it is not usually required to state all information called for as fully as an accountant would ordinarily interpret the forms and instructions. For instance, in one case Schedule B-6, which calls for a "true list of all books," was satisfactorily executed in that respect by the simple statement "a complete set of double-entry books." While this thought is given for guidance of practitioners, it is not meant to prevent them from submitting any information they may find convenient or desirable. If there are any damage suits or other litigation pending, the amount alleged due must be stated. Contingent liabilities must be stated also.

In short, in executing the schedules emphasis must be put on the detailed statement of all legal rights and liabilities.

COMPOSITIONS.—A composition is "an agreement between a debtor and his creditors by which the creditors consent to accept in discharge of their claims a lesser sum than the amount due."

A composition may be effected only with the confirmation of the court. The debtor may move to have the case against him dismissed when he has delivered to the court the amount agreed upon for distribution to his creditors. See section on "Credits and Collections."

DISCHARGE OF THE BANKRUPT.—The bankrupt's right of discharge is statutory. It may be denied, however, if, for instance, he has failed to keep proper books from which his condition might be ascertained, or has destroyed or concealed his books. It must appear that there has been an **intent to conceal** from creditors the true financial condition. Mere failure to keep books, or bad bookkeeping, might not be sufficient to establish such an intent. Mutilation or destruction of essential records, such as receipts and vouchers, probably would be sufficient. See section on "Credits and Collections."

The court may also revoke a discharge if the bankrupt has:

1. Committed an offense punishable by imprisonment.
2. Obtained property on credit from any person upon a materially false statement in writing made to such person for the specific purpose of obtaining such property on credit.
3. At any time, subsequent to the first day of the first 4 months immedi-

ately preceding the filing of the petition, transferred, removed, destroyed, or concealed any of his property with intent to hinder, delay, or defraud his creditors.

4. In voluntary proceedings been granted a discharge in bankruptcy within 6 years.

5. In the course of proceedings in bankruptcy refused to obey any lawful order of or to answer any material question approved by the court.

A petition and an order for the discharge of a bankrupt are substantially as shown in Form 3.

....*K. G. Namer*...., of....*Bontown*...., in the County of....*Independence*....and State of....*New York*...., in said district, respectfully represents that on the....*first*....day of....*February, 19—*....he was duly adjudicated a bankrupt under the acts of Congress relating to bankruptcy; that he has duly surrendered all his property and rights of property and has now fully complied with all the requirements of said acts and of the orders of the court touching his bankruptcy.

WHEREFORE, ...*he*....prays that....*he*....may be decreed by the court to have a full discharge from all debts provable against his estate under said bankrupt acts, except such debts as are excepted by law from such discharge.

Dated this....*25th*....day of....*February*....A. D.....*19—*....

....*K. G. Namer*....
Bankrupt

FORM 3. Petition for Discharge of Bankrupt

IN THE DISTRICT COURT OF THE UNITED STATES, for the....*Western*....District of....*New York*....

WHEREAS, ...*K. G. Namer*...., of....*Bontown*...., in said district, has been duly adjudged a bankrupt, under the acts of Congress relating to bankruptcy, and appears to have conformed to all the requirements of law in that behalf, it is therefore ordered by this court that said....*K. G. Namer*....be discharged from all debts and claims which are made provable by said acts against....*his*....estate, and which existed on the....*tenth*....day of....*December*....A. D.....*19—*... on which day the petition for adjudication was filed by....*him*....; excepting such debts as are by law excepted from the operation of a discharge in bankruptcy.

WITNESS THE HONORABLE....*Thomas Maillam*...., Judge of said District Court, and the seal thereof, this....*25th*....day of....*February*....
A. D.....*19—*......

....
(Seal of the Court) Clerk

FORM 4. Order for Discharge of Bankrupt

DEBTS DISCHARGED.—All of a bankrupt's provable debts are canceled by his discharge, excepting taxes, liability for intentional fraud, and wilful injuries to persons or property. Leaseholds or other contractual obligations that are not provable are not canceled. Alimony is not dischargeable, nor are debts which were not scheduled. See section on "Credits and Collections." The court's order discharging a bankrupt is shown in Form 4.

PROVABLE DEBTS.—Debts founded on legal contracts, expressed or implied, may be proved. If there is no present liability under the contract at

time proof of debt is made, as in case of rent to become due at a future date, the claim is not provable. Damages may be proven, although the exact amount thereof may not have been determined. See section on "Credits and Collections."

CREDITORS.—Creditors are entitled to due notice of all proceedings during the administration of a bankrupt's estate. That is, creditors must be notified of all examinations of the bankrupt, hearings for confirmation of compositions or discharge, creditors' meetings, sales, dividends, and examination of claims and compromises. Therefore, the usefulness of complete lists of creditors, which the accountant is often called upon to prepare, is seen.

The form of official notice to creditors at the commencement of proceedings is substantially as shown in Form 5.

IN THE DISTRICT COURT OF THE UNITED STATES, for the ....
District of.......... In the Matter of..........Bankrupt.
TO THE CREDITORS OF.........., of.........., in the County of......
and district aforesaid, a Bankrupt:
NOTICE is hereby given, that on the..........day of..........A. D. ...., the said..........was duly adjudicated bankrupt and that the first meeting of his creditors will be held at my office, Room.........., ...in ....on the..........day of........... A. D........., at.........o'clock in the (forenoon) at which time the said creditors may attend, prove their claims, appoint a trustee, examine the bankrupt and transact such other business as may properly come before said meeting.

....
Referee in Bankruptcy

Dated at..........

FORM 5. Official Notice to Creditors

APPOINTMENT AND DUTIES OF REFEREES.[3]—

Courts of bankruptcy shall. . . .appoint referees for a term of two years, and may, in their discretion, remove them because their services are not needed or for other cause. Referees shall (1) declare dividends and prepare and deliver to trustees dividend sheets showing the dividends declared and to whom payable; (2) examine all schedules of property and lists of creditors filed by bankrupts and cause such as are incomplete or defective to be remedied; (3) furnish such information concerning the estates in process of administration before them as may be requested by the parties at interest; (4) give notices to creditors as herein provided; (5) make up records embodying the evidence, or the substance thereof, as agreed upon by the parties in all contested matters arising before them, whenever requested to do so by either of the parties thereto, together with their findings therein, and transmit them to the judges; (6) prepare and file schedules of property and lists of creditors required to be filed by the bankrupts, or cause same to be done, when the bankrupts fail, refuse or neglect to do so; (7) safely keep, perfect and transmit to the clerks the records herein required to be kept by them when the cases are concluded; (8) transmit to the clerks such papers as may be on file, as needed in any proceedings; and (9) preserve the evidence taken before them. Referees shall not act in cases in which they are interested; practice as attorneys in any bankruptcy proceedings; or purchase, directly or indirectly, any property of an estate in bankruptcy.

APPOINTMENT AND DUTIES OF TRUSTEES.[4]—

The creditors of a bankrupt estate shall, at their first meeting after the adjudication

[3] Bankruptcy Law, Sec. 39.
[4] Bankruptcy Law, Sec. 47.

or after a vacancy has occurred in the office of trustee, or after an estate has been reopened, or after a composition has been set aside or a discharge revoked, of if there is a vacancy in the office of trustee, appoint one or three trustees of such estate. If the creditors do not appoint a trustee as herein provided, the court shall do so. Trustees shall account for and pay over to the estates under their control all interest received by them upon the property of such estate; collect and reduce to money the property of such estate; deposit moneys in designated depositories; disburse money only by check or draft on the depositories; furnish such information concerning the estates as may be requested by parties in interest; keep regular accounts showing all amounts received and from what sources and all amounts expended and on what accounts; lay before the final meeting of the creditors detailed statement of the administration of the estate; pay dividends within ten days after they are declared by the referees; and set apart the bankrupt's exemptions.

TRUSTEE'S TITLE.[5]—

The trustee, upon appointment and qualification, is vested by operation of law with the title of the bankrupt, as of the day he was adjudged a bankrupt, except as to exemptions, to all (1) documents, (2) interests in patents, etc., (3) powers which he might have exercised for his own benefit, (4) property transferred to him in fraud of his creditors, (5) property which prior to the filing of the petition he could by any means have transferred or which might have been levied upon and sold under judicial process against him, and (6) rights of action arising upon contracts, etc.

RECEIVERS IN BANKRUPTCY.—A receiver is usually appointed by the court to receive and preserve the subject matter of the bankrupt's estate. His appointment usually follows in instances where there is danger of waste, neglect, or fraud if the bankrupt remains in possession. Form 6,[6] showing a petition by creditors for the appointment of a receiver, sufficiently explains the occasion for the appointment of a receiver in bankruptcy.

..........and..........and ...., the petitioning creditors in the involuntary petition in bankruptcy pending herein against ...., the alleged bankrupt above named, move the court for an order appointing a receiver herein, and for a warrant to issue to such receiver, authorizing and directing..........to seize the property of said alleged bankrupt and to hold the same pending the hearing upon said petition; and this..........for upon the ground that it is absolutely necessary, for the preservation of the estate, that...... ...be appointed; that said alleged bankrupt has committed an act of bankruptcy in that heretofore to wit, on the..........day of.......... A. D.........., ...did transfer and pay to................the sum of................Dollars, with the intent, while solvent, to prefer the said ....,..........creditors, over the other creditors of the said..........; and that said alleged bankrupt has neglected and is neglecting, and is about to further so neglect..........property that it has deteriorated and is hereby deteriorating, and is about to further deteriorate in value, and this is so from the following facts, to wit: That on, to wit, the..........day of...... ... A. D.........., the said alleged bankrupt ceased operations at....... .. factory, and the same is now shut down; that the yards of the said alleged bankrupt are not protected or sheltered, that the buildings are open, and that the machinery and stock in said yards and building are not properly guarded and protected against the weather and trespassers; and that the yards, building, and machinery are in a dilapidated condition.

FORM 6. Petition for Appointment of Receiver

[5] Remington on Bankruptcy, p. 2721.
[6] 14 M. A. L. 668.

PROOF OF CREDITORS' CLAIMS.—All claims of creditors must be proved. When proved, and accepted by the court, the claim is allowed in the meaning of the statute. In the proof of a debt there must be a statement in writing, signed and sworn to by the claimant, setting forth the dates of all items, their consideration, collateral held thereagainst, payments thereon, maturity dates, and a statement to the effect that the sum stated to be due is justly owing. It must appear from the proof of claim whether the claimant is an individual, a partnership, or a corporation, and the relation of the affiant thereto. The original of written instruments should be attached to and made a part of the proof of claim. The adaptation of the proof of claim to an individual, partnership, or corporation is effected by wording the statement according to one of the following clauses:

1. That he hereinafter designates **himself** as claimant.
2. That affiant is a member of the **copartnership** trading as.................... and hereinafter designated as claimant. That said claimant does business at the place above set forth, and that affiant has subscribed the partnership name and is duly authorized by said firm to make, execute, acknowledge, and verify this proof of claim and power of attorney.
3. That he is an officer of............................, **a corporation** duly organized under the laws of the state of............... That he resides at the place above mentioned. That he is treasurer or performs the duties of treasurer of the said corporation. That the seal affixed hereto is the seal of said corporation and was so affixed by order of its board of directors and that he has signed its name hereto by like order. Said corporation is hereinafter designated as the claimant.

The statement to be made with respect of the claim itself is as follows:

That the above-named bankrupt was at and before the time of the filing of the petition in bankruptcy herein and still is justly and truly indebted to said claimant in the sum of....*One Hundred and Fifty-seven*....dollars ($....*157.00*....) That the consideration of said debt is....*groceries bought by and delivered to said K. G. Namer*....as set forth in the annexed statement marked "Exhibit A" and made a part hereof. That said amount set forth in said "Exhibit A" is justly due and owing. That no part thereof has been paid. That there are no offsets or counterclaims thereto. That deponent has not, nor has any person for or on behalf of said claimant, or to this deponent's knowledge or belief, for the use or benefit of said claimant had or received any security for said debt whatever. That no judgment has been rendered therefor or any part thereof, nor has any note or other evidence of said debt been received except such note or evidence of said debt, if any, which is attached to this document.

Exhibit "A," just mentioned, takes the form, usually, of the conventional account statement, thus:

Account Statement

New York, Dec. 5, 19—

K. G. Namer,
In Account With
John Hendricks, Dr.

19—		
Jan. 4,	12 cases tomatoes....................................	$ 24.00
Feb. 21,	14 sacks potatoes....................................	112.00
Mar. 1,	400 lbs. sugar....................................	21.00
		$157.00

If it is desired to designate a representative of the creditor in the procedings, it may be accomplished by incorporating a power of attorney in the proof of claim, or by appending thereto a power of attorney, which, in either case, would read substantially as follows:

Said claimant hereby appoints.....................or....................representative.. and each of them, attorneys in fact, authorizing them and each of them to attend any and all meetings of creditors or adjourned meetings of creditors of the bankrupt in any court of bankrupty or before any referee in bankruptcy, and for said claimant and in the name of said claimant to vote for or against any proposal or resolution that may be submitted in reference to the estate of the above-named bankrupt and in the choice of trustee or trustees and for said claimant to appoint such trustee or trustees. To accept or refuse any composition in or out of bankruptcy proposed by said bankrupt. To receive and collect any payments of dividends or fees or moneys due said claimant under any composition or otherwise and in general to take such action and do such acts, execute such consents and documents for such claimant as said attorney may deem best, as fully as such claimant could do if personally present.

SECURED CREDITORS.—According to the Bankruptcy Law, when a creditor has security for his debt, the security must be surrendered or sold before the principal debt can be realized upon. A similar doctrine has been adopted in some states in connection with their insolvency laws (16 Mass. 308; 9 M.A.L. 387). In many states, however, this principle marks a distinction between the Bankruptcy Law and the insolvency laws.

TIME OF FILING CLAIM.—Creditors should be prompt in filing their claims. Their claims are lost unless they do so within one year after date of adjudication; excepting that a creditor who is without fault may file his claim later.

CONTESTED CLAIMS.—Claims may be contested by objection of other creditors at the time of filing. Otherwise, the claim as proven will usually be allowed by the referee.

PREFERENCES.—

A person shall be deemed to have given a preference if, being insolvent,[7] he has, within four months from the filing of the petition and before adjudication, procured or suffered a judgment to be entered against himself in favor of any person or made a transfer of any of his property, where the effect of the enforcement of such judgment or transfer will be to enable anyone of his creditors to obtain a greater percentage of his debt than any other of such creditors of the same class.[8]

A chattel mortgage, a lien, a sale, payment on a note, giving security on an existing debt, and every other mode of disposing of or parting with property or the possession of property, absolutely or conditionally, as a payment, pledge, mortgage, gift, or security, is a transfer, and, contingent upon the facts, may be a preference.[9] Creditors who have received preferences, conveyances, etc., may not have their claims allowed unless such preferences are surrendered.

To establish a preference, insolvency must be alleged and found as a fact, and the intent of the debtor to prefer must be proved. Therefore, the provisions of the Bankruptcy Act forbidding transfers, etc., of assets after insolvency does not invalidate payments made in the usual course of business before the commission of an act of bankruptcy and not in contemplation thereof, though the enterprise, if wound up at the time, would in fact be unable to meet its

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7 See "Insolvency," *infra*.
8 Bankruptcy Law, Sec. 60.
9 Bankruptcy Law, Sec. 1, Subd. 25.

obligations.[10] In other words, it cannot be said that all payments, transfers, etc., after or in contemplation of insolvency are preferences, if made in due course of business and if not made with a view to prefer one creditor to another. For instance, if after or in contemplation of insolvency a security is given for a debt then created, without fraud in fact, and intended merely to adequately protect a loan made at the time, the transfer of the security is not a preference.[11]

Two illustrations of preferences, taken from reported cases,[12] are given below:

Nov. 6, 1899, Lyon owed Batten & Co. $1,888.61 for advertising. This account was reduced by cash payments until at Dec. 31, 1899, $630.47 was due. During December additional advertising was done for which Lyon was charged $546.02. And it is for this sum that claim was filed. The court refused to allow this claim unless Batten & Co. surrendered the sum of $210.15 alleged to have been paid to them by the bankrupt while insolvent. The $210.15 which was thus held to be a preference, represented a check, dated Jan. 20, 1900, delivered to the payee Jan. 2, 1900, in payment of the final one-third of the account for $630.47. The previous payments on this amount were made prior to Jan. 20, the day the debtor became insolvent; but the third check, the one in controversy, was deposited by Batten & Co. in their bank on Jan. 20, and was paid by the drawee bank on Jan. 21, one day after insolvency.

One Sizer on Dec. 23, 1899, sold to the bankrupt merchandise of the value of $232.46, for which he received

Jan. 24, 1900	Cash	$ 29.68
Jan. 24, 1900	Note, payable and paid Apr. 23	200.00
Jan. 31, 1900	Cash	2.78
		$232.46

At subsequent dates Sizer sold the bankrupt merchandise as follows:

Mar. 10	$357.80
Aug. 16	20.62
	$378.42

It was held that the payment on Apr. 23 of the note for $200 was a preference, and should be returned as a condition of proving debts arising on and after Mar. 10.

After the giving of the note and before its maturity (Apr. 23) and payment (Mar. 10) the bankrupt bought goods amounting to $357.80, so that at such date the bankrupt owed Sizer the note representing an account for goods sold and the additional sum of $357.80. While the payment was distinctly on the note, and for the purpose of extinguishing it, yet it was a partial payment of a portion of the whole amount of the indebtedness owing from the bankrupt to the creditor.

Preferences obtain only in bankruptcy proceedings. But it is often found desirable in proceedings in insolvency, in cases where there may be present the essentials of a preference, to supersede the insolvency proceedings by a petition in involuntary bankruptcy in order to invoke the rule of preferences and thus insure an equitable distribution of the estate.

On any engagement disclosing an apparently insolvent condition, the accountant should be on the alert for preferences or other acts of bankruptcy, if only to counsel the client.

PRIORITY OF CERTAIN DEBTS.—In bankruptcy proceedings, debts due creditors take rank as follows:

1st. Taxes and debts due the United States.

2nd. Actual and necessary costs of preserving the estate.

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[10] See 174 U. S. Rept. 610, *re* national banks.
[11] 41 Fed. Rep. 234.
[12] 121 Fed. 723, and 112 Fed. 406; 12 M. A. L. 813, 815.

3rd. Filing fees and reasonable expenses paid by creditors in recovering to the estate property transferred or concealed by the bankrupt.
4th. Costs of administering the estate, including attorneys' fees.
5th. Wages of workmen, clerks, salesmen, servants, earned within 3 months and not exceeding $300 for each claimant.
6th. Debts given priority by the laws of the various states.
7th. General creditors.

DIVIDENDS.—Dividends are paid at the discretion of the court, subject to several prescribed conditions. Creditors' rights to dividends are not affected by proof and allowance of their claims subsequent to date of the dividend.

SET-OFFS AND COUNTERCLAIMS.—Sec. 68 of the Bankruptcy Act provides that in case of **mutual debts** or credits between the estate of a bankrupt and a creditor, the account shall be stated and one debt shall be set off against the other and the balance only shall be allowed or paid. But a set-off or counterclaim shall not be allowed in favor of any debtor of the bankrupt which, (1) is not provable against the estate, or (2) was purchased by or transferred to him after the filing of the petition, or within 4 months before such filing, with a view to such use and with knowledge or notice that such bankrupt was insolvent, or had committed an act of bankruptcy.

STATE BANKRUPTCY LEGISLATION.—The extent to which any of the several states may have passed bankruptcy laws, or rather laws having the general effect of bankruptcy laws, is a matter that cannot be treated at length here.

In any event, such laws will be found to parallel the insolvency laws so closely that the comments on insolvency procedure as next presented cover their salient points adequately for all ordinary purposes.

Insolvency

INSOLVENCY DEFINED.—"Insolvency is the state of a person who cannot pay his debts as they mature. This is the real point in insolvency, for a debtor's estate may amount to much more than his debts, yet if he has not money enough on hand to pay as the debts become due, he is practically and legally insolvent."[13]

For purposes of the Bankruptcy Law a person is deemed insolvent whenever the aggregate of his property (excluding any that he has concealed or disposed of to defraud his creditors) shall not, at a fair valuation, be sufficient in amount to pay his debts.

The term insolvency as used in the bankruptcy act, forbidding the transfer, etc., of the assets **after** or **in contemplation** of insolvency, does not mean an absolute inability of a debtor to pay his debt at some future time upon a settlement and winding up of his affairs, but a present inability to pay in the ordinary course of business.[14]

It has been held that a bank is "in contemplation of insolvency" when the fact becomes reasonably apparent to its officers that it will presently be unable to meet its obligations and will be obliged to suspend its ordinary operations.[15]

DISTINGUISHED FROM BANKRUPTCY.—Although the terms **bankruptcy** and **insolvency** are sometimes used indiscriminately, they have in legal and commercial usage distinct significations. Insolvency implies merely the

[13] Conyngton, Business Law, Vol. II, § 524.
[14] 2 Woods 23; 1 N. B. C. 276.
[15] 24 Fed. Rep. 571.

inability to meet one's debts—that one's liabilities are greater than his present means of meeting them. The insolvent may be able to carry on his business by means of credit, paying old debts by incurring new ones, and none of his creditors can institute legal proceedings. If fortunate, he may regain a position of solvency. "It would be possible for a skilful business man to start a business on borrowed capital, in which case it would be insolvent from the start. If his borrowed money did not come due for some time, he meanwhile could do business and make money and when his loans came due, pay part and renew the balance until he succeeded in accumulating assets in excess of his indebtedness and making the business solvent."[16] Even if his insolvency became public and default occurred, a debtor may still avert bankruptcy if he is able to effect a voluntary arrangement with his creditors.

Bankruptcy, on the other hand, usually implies failure, and means the winding up of the estate and discharge from any unsatisfied portion of the debtor's debts then due.

CAUSES OF INSOLVENCY.—The state of insolvency may be caused by a variety of circumstances. In case of a commercial institution, for instance, insolvency may be caused by excessive operating losses, impaired credit standing, insufficient capital for volume of business undertaken, extending too liberal credit to debtors, or otherwise tying up excessive amounts of capital in plant, inventories, or any non-liquid asset.

Insolvency Illustrated.—Balance sheets A, B, and C, following, are submitted to illustrate several insolvent conditions.

(A) **Balance Sheet as at December 31, 19—**

Cash	$ 5,000	Notes Payable, due Jan. 2, 19—		$100,000
Accounts Receivable	6,000	Accounts Payable, due Jan. 2, 19—		40,000
Inventories	10,000			$140,000
Plant	50,000	Capital Stock	$25,000	
		Deficit from Operations	94,000	69,000
	$71,000			$ 71,000

In this instance operating losses have so depleted working capital that the company cannot meet its maturities by cash payments, nor by liquidating or hypothecating its receivables or other assets. If the liabilities matured, say, 30 days hence, the company would still be insolvent, as current operations for the ensuing 30 days could not yield sufficient resources with which to meet maturities.

The condition here presented could be remedied by refinancing and paying in such new capital as would be required to liquidate the maturing liabilities, or such a portion of them as would enable the company to obtain an extension of the due date on the remainder.

Inducing the creditors to extend the maturity of their obligations to a time when the company could recover its solvency, as by issuing capital stock in

[16] Conyngton, Business Law, Vol. 2, § 524.

exchange for the liabilities due to the creditors, would relieve the condition. But any impairment of the company's credit would limit the probability of effecting such an arrangement.

It is wrong to assume the solvency of a concern merely because its books or its balance sheet do not show an impaired capital account (a deficit). These media may not and often do not disclose either the state or the cause of insolvency. The facts govern, and if the maturing obligations cannot be met in due course, the business is insolvent. Such a state of affairs is shown in the following balance sheet:

(B) **Balance Sheet as at December 31, 19—**

Cash	$ 5,000	Notes and Accounts Payable, due		$285,000
Accounts Receivable	6,000	Acceptances Payable		125,000
Raw Materials, requiring 6 months to process, and not otherwise salable	225,000	Capital Stock	$25,000	
Goods in Process	50,000	Surplus	1,000	26,000
Plant	150,000			
	$436,000			$436,000

Assuming that the liabilities as stated in this balance sheet mature before the inventory can be liquidated, the company is insolvent. A concern in this position is not often insolvent, however, because of its having arranged beforehand for the late maturity of its obligations.

Insolvency may be also the result of commitments for large quantities of goods. In the foregoing instance the company would be insolvent if, instead of having its raw material on hand, it had been contracted for delivery and payment in, say, 60 days.

(C) **Balance Sheet, as at December 31, 19—**

Cash	$ 6,000	Notes and Accounts Payable		$385,000
Accounts Receivable, of which only 25% are collectible	230,000	Capital Stock	$25,000	
Other Assets	200,000	Surplus	26,000	51,000
	$436,000			$436,000

Insolvency brought on by extending too liberal lines of credit is apparent in this case (C). Likewise, if receivables are good, but do not mature in time to meet maturing liabilities, insolvency exists.

Insolvency may come quickly. Values may drop rapidly, and creditors may suddenly call their accounts, either or both circumstances causing the debtor to default. During the period of depression following the World War, these two factors were much in evidence. As a result, many otherwise sound and prosperous concerns found themselves insolvent. Realization of this condition of insolvency, and faith on the part of creditors in the ability of these concerns later to work out of their difficulties, gave rise to the creditors' committee

receiverships, popular during 1919 and 1920. These receiverships, further mentioned in a later paragraph, were, in the last analysis, merely agreements among creditors to extend maturity of their obligations.

WHEN INSOLVENCY LAWS ARE TO BE PREFERRED.—As between bankruptcy and insolvency procedure, the former is more severe and is supreme. Proceedings begun in equity must yield if later bankruptcy proceedings are started. Insolvency procedure offers many advantages to the debtor and his creditors. Excepting in a few instances of pronounced failure or fraud, creditors generally favor equity procedure, especially where desired merely to regulate the winding up of an unsuccessful enterprise, or where there is a possibility of the enterprise recovering from its difficulties. Business men generally are becoming less favorable to legal interference, and avoid it wherever possible. Pronounced trend in this direction is indicated by the recently popular creditors' committee receiverships, resorted to in lieu of petitioning for appointment of court receivers. Dewing[17] says that "to force all businesses, whether public or private, through the bankruptcy court because they cannot find the means at some critical time to pay their obligations, involves economic waste—omitting the individual injustice—which our present social order cannot tolerate. Accordingly, the court receivership (insolvency procedure) and the creditors' committee receivership have developed as methods of meeting a situation where the traditional legal processes are ordinarily destructive and socially wasteful."

These reliefs are particularly desirable where it is sought to relieve the debtor of oppressive contracts or commitments which otherwise would wreck the enterprise. These reliefs may be resorted to, however, only with the assent of the creditors.

ASSIGNMENTS FOR BENEFIT OF CREDITORS.—Embarrassed debtors often find a satisfactory means of winding up merely unprofitable ventures in the state assignment laws. "Voluntary assignments for the benefit of creditors are transfers without compulsion of law by debtors, of some or all of their property to an assignee, or assignees, in trust to apply the same, or the proceeds thereof, to the payment of some or all of their debts, and to return the surplus, if any, to the debtor."[18] This is an act of bankruptcy.

RIGHTS AND DUTIES OF ASSIGNEE.—An assignee should be authorized to pay claims in the order in which they are entitled to be paid by law. He must give an accounting as provided by the terms of the assignment. He may hire such clerks, agents, etc., as are necessary to discharge his trust. He receives claims filed by creditors, as provided by the assignment.[19]

Receivership

NATURE OF RECEIVERSHIPS.—In court receiverships, courts assume control and direction of properties in litigation, the receiver being the court representative. Courts appoint receivers for such properties only to prevent fraud, protect the property from injury or preserve it from destruction.[20] (NOTE:—See discussion of receivership accounting in section on "Corporations.")

[17] *Harvard Business Review*, Oct. 1922, pp. 31–32.
[18] Burrill on Assignments, § 2.
[19] Conyngton, Business Law, Vol. II.
[20] See Receivers in Bankruptcy, *supra*, p. 1027, for form of petition for appointment of receiver in bankruptcy.

Creditors can force the winding up of the business of a person who is insolvent and who has committed an act of bankruptcy by bringing a suit in equity to have a receiver appointed, who then takes charge of the business, sells the property, and pays off the claims under direction of the court, or by going into the federal court and bringing bankruptcy proceedings.[21]

The Comptroller of Currency is empowered by federal statutes to appoint, and in practically every case he does appoint receivers for national banks. The Comptroller's power to appoint a receiver is not exclusive, however, and a court of equity of competent jurisdiction may direct a receivership of a national bank.[22]

Insolvent national banks can be wound up only in the manner provided by the National Banking Act.

RECEIVER DEFINED.—A receiver, as defined by Pomeroy,[23] is "a person standing indifferent between the parties, appointed by the court as a quasi-officer or its representative, to hold, manage, control and deal with the property which is the subject matter of or involved in the controversy, under the court's direction, either, (a) where there is no one entitled competent thus to hold it; or (b) where two or more litigants are equally entitled, but it is not just and proper that either of them should retain it under his control; or (c) where a person is legally entitled, but there is danger of his misapplying or misusing it; or (d) where he is appointed in like manner and under like circumstances for the purpose of carrying into effect a decree of court concerning the property."

If the estate includes property in several states in which there are creditors, a receiver is appointed in each state. The receiver appointed at the domicile is called the **principal receiver**; the others are called **ancillary receivers.**

RECEIVER'S POWERS.—At every step the receiver is subject to the control and supervision of the court in his management of the property or funds placed in his charge. As soon as he is appointed, the receiver makes out a complete inventory of the property and effects coming into his hands. Local statutes governing the activities of receivers should always be consulted by the accountant in cases of receivers in equity.

A receiver must usually proceed to wind up a business instead of indefinitely continuing it. But it may be carried on with the approval of the court. Receivers have certain discretionary powers in managing and controlling property in their care. When they exercise discretion and good faith, their acts will ordinarily be confirmed.

Receivers may, with the approval of the court, borrow money to meet necessary operating expenses. Such indebtedness takes precedence over all other debts.

Receivers should pass in the first instance upon the validity and propriety of claims presented.

Compensation of receivers is fixed by statute, or by the court in special cases.

RECEIVERS CLASSIFIED.—Receivers may be divided into three general classes, viz.:

1. Receivers in bankruptcy.
2. Receivers in equity.
3. Receivers, so called, representing creditors' committees and assignees.

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[21] Conyngton, Business Law, Vol. II, § 525.
[22] 121 Fed. Rep. 287.
[23] Equity Jurisprudence (3rd Ed.) § 1330; 9 M. A. L. 461.

Receivers in bankruptcy are governed by the federal court appointing them. They are governed also in a measure by instructions of their counsel, which the court permits them to employ. **Receivers in equity** are appointed by state courts administering the respective state insolvency or bankruptcy statutes. **Receivers (trustees) representing creditors' committees** are subject to the contractual relationship established by the agreement upon which their appointment is based. The two latter classes of receivers usually continue their business until it may be wound up most favorably, or until it can be restored to its owners.

The distinctions between these three classes of receivers are of interest to the accountant only in that he should know the source of the receiver's authority, so that he may be governed accordingly. The succeeding comments may be applied, therefore, without respect to the character of the receivership.

RECEIVER'S ACCOUNTS.—Receivers, regardless of the principal they represent, are not required to keep books in any prescribed way. They may open new books, or continue to use the old books. If the receiver is to continue the business, the accountant will find it advantageous, for practical reasons, to continue in so far as feasible the accounting methods and procedures of the old administration, even though he opens new books for the receiver.

The receiver should inventory all assets taken over by him at values at which he believes the assets are realizable. The accountant may be governed by these values in opening the receivers books. The accountant may, if directed so to do by the receiver, establish the values at which the accounts will be taken over. Usually, such assets as good-will, treasury stock, deferred charges, or other intangible or "unrealizable" assets are not taken over. The receiver is required to account, however, for any amounts received from the disposal of assets by him that may be in excess of the amount at which they were so taken over. For instance, accounts receivable aggregating $100,000, if taken over at $80,000 and liquidated at $85,000, would be recorded as follows:

Accounts Receivable, Control Account

19—			19—		
Jan. 1	To Receiver's Equity; taking over accounts of X Company aggregating $100,000, but considered worth	$80,000	Jan. 31	By Cash, amount realized from accounts liquidated	$85,000
Jan. 31	To Receiver's Equity, increasing the value at which the accounts were originally taken over	5,000			
		$85,000			$85,000

At the outset of his administration, the receiver should transfer all funds in banks to bank deposit accounts in his official name. He should notify the banks to stop payment on any of the checks of the estate then outstanding. He

should notify creditors to file their claims. He should instruct employees that all correspondence, etc., is thereafter to bear his official signature. He should instruct the receiving department of the company to defer receipt of all materials and supplies or merchandise until he approves the receipt thereof; this because he may reject or discontinue any contracts of the former management, and he should do so if they are not advantageous to the estate. Sales made subsequent to the receiver's appointment should be billed upon billheads bearing his official title. It is usually quite practical for the receiver to obtain a number of rubber stamps and stamp all stationery on hand with his official title, as for instance:

John Smith, Receiver
or
Estate of X Company by John Smith, Receiver

The receiver will also prepare inventories of insurance policies in force, contracts, leases, or similar agreements, and have suitable assignments executed for all of these instruments to be continued by him.

The receiver's accounting procedure embraces, (1) the opening of his books of account, or the reopening, under his direction, of the old books; (2) making accurate record of the transactions of his administration; and (3) closing his books for the desired intermediate accounting periods, and at the termination of his custody of the properties.

In opening his books the receiver needs, in addition to the accounts formerly carried, (1) a capital account, in which to record the net worth of the estate taken over (at his valuations), plus or minus any increases or decreases thereof, and (2) an account, or a suitable classification of accounts, for the recording of liabilities or outlays incurred with his approval for merchandise purchases, borrowed money, and expenses of his administration.

The **receiver's capital account** is usually styled "Estate of John Doe, William Smith, Receiver," "Estate of X Company, William Smith, Receiver," or "Receiver's Equity." The latter title is shorter and preferable.

The receiver must keep separate the liabilities incurred by him and those incurred by the estate prior to his appointment. This is important because the indebtedness incurred by him is paid in full before the general creditors of the estate may share in the assets. This separation is often difficult to make. It is particularly so in respect of merchandise or goods in transit at date of the appointment. Legally, the receiver is liable for any merchandise or goods in transit the title to which passes from the shipper after date of appointment, provided the receiver accepts title. When title passes is an involved legal question. The only safe rule for the accountant or the receiver is to regard all purchases as obligations of the estate, unless they are clearly the obligations of the receiver.

Nominal accounts following, so far as practical, the classification used by the company, should also be opened to record the result of the receiver's operations of the properties when he continues the business. Periodically these accounts are closed into Profit and Loss and then into the Receiver's Equity account, precisely as the former owners would have closed their nominal accounts into Profit and Loss and then into Surplus account.

The **following comments and illustrations** further explain some of the procedures just mentioned.

Assume that a receiver has been appointed for a certain company. The books, having been closed as at the date of appointment, show the following position:

Balance Sheet as at December 24, 19—

Cash	$ 5,000	Notes Payable		$ 55,000
Accounts Receivable	10,000	Accounts Payable		45,000
Inventories	50,000			
Plant	50,000			$100,000
Good-Will	10,000	Capital Stock	$20,000	
		Surplus	5,000	25,000
	$125,000			$125,000

The receiver has the assets appraised, with the following result:

	Book Value	Appraised Realizable Value	Estimated Shrinkage
Cash	$ 5,000	$ 5,000	....
Accounts Receivable	10,000	8,000	$ 2,000
Inventories	50,000	30,000	20,000
Plant	50,000	45,000	5,000
Good-Will	10,000	....	10,000
	$125,000	$88,000	$37,000

Although assets are usually appraised at less than book value, it does not follow that they must be. Often the book value of an asset is found to be less than the realizable value. Such a condition could be due to any one of a number of causes. Excessive depreciation charges, or appreciation not taken into the books, would result in too low book values. In this case, the higher value would be used in opening the receiver's books.

Moreover, it is to be noted that liabilities are to be taken over at their stated amounts, plus any claims of whatever nature. Damage suits or contingent liabilities of whatever nature are given effect to at the probable settlement value. It is rare indeed that liabilities are taken over at less than book value.

The following journal entry will open the receiver's books on the foregoing figures:

Cash	$ 5,000	
Accounts Receivable	8,000	
Inventories	30,000	
Plant	45,000	
Receiver's Equity	12,000	
Liabilities of X Company		$100,000
	$100,000	$100,000

To open the accounts of William Smith, Receiver, Estate of X Company, as of date of his appointment, and at values established by appraisal.

Books of the former owners will remain *in statu quo*[24] until the receivership

[24] See pp. 1046, 1047, *infra*.

is dissolved and the business returned to its owners. If the receiver continues the old books, instead of opening new books, the following entry should be made in lieu of the above entry.

Receiver's Equity	$12,000	
Capital Stock	20,000	
Surplus	5,000	
Accounts Receivable		$ 2,000
Inventories		20,000
Plant		5,000
Good-Will		10,000
	$37,000	$37,000

To close the accounts of the corporation, and reopen them as for the receiver; reducing assets to the value placed thereon by the receiver and charging the receiver with the net estate delivered to and received by him as at date of his appointment.

A credit balance in the Receiver's Equity account indicates the amount the assets of the estate are expected to realize in excess of the liabilities. A debit balance in this account indicates that the liabilities exceed the realizable value of the assets, and that the general creditors will ultimately receive that amount less than the aggregate of their claims.

When additional assets are received or discovered by the receiver during his administration, or if he operates the properties at a profit, the Receiver's Equity account is credited therefor. Likewise, an amount realized on assets in excess of the value at which they were taken over would be a credit to this account. So too, a liability settled for an amount less than that at which it was taken into the receiver's records would result in a corresponding credit to his equity account. Dividends in distribution paid by the receiver should be charged to the respective creditors' accounts as follows:

Liabilities of X Company (list creditors)	$...,...	
Dividends Payable		$...,...

To record dividend in distribution No. — being a dividend of — per cent as authorized by the court and directed to be paid as of —, date.

When the dividend is actually paid the cash book will show the customary entry, which in effect is:

Dividends Payable	$...,...	
Cash		$...,...

After all assets have been liquidated and final distribution made of proceeds, any unpaid balance in the accounts of the respective creditors is to be transferred to the Receiver's Equity account, automatically closing his books.

The Receiver's Equity account should be charged with losses from his operations of the properties, losses due to the disposal of assets for less than they were taken over, and for additional liabilities disclosed during his administration.

In opening his accounts the receiver should show outstanding checks of the former management as liabilities. Accounts receivable showing credit balances are liabilities. Debit balances on the creditors ledgers are stated as assets. Notes payable to banks may be claimed by the holding banks to be offsets against deposits with them. In these cases and in many close cases respecting

set-offs and **priorities,** the accountant should submit them for final approval to the receiver or his counsel, and until that approval is obtained he should treat the items only as they may conclusively be proved. That is, he should not recognize a so-called set-off but state both the asset and the liability, excepting where the facts are beyond question. And so with priorities. The courts have sole jurisdiction in these matters, and the accountant should exercise great caution in passing upon them. It is better to reject a claim for priority or set-off than to cause the receiver to become individually responsible for the amount involved. The receiver has all to gain and nothing to lose by refusing payment or approval of any such claim until directed by his counsel or the court with respect thereto.

The accounting procedure for the receiver's activities subsequent to his appointment will be but slightly affected by the court's direction to wind up the business forthwith, or to continue it for a time. In either case the recognized principles and practices of bookkeeping govern. Cash receipts are credited to the accounts giving rise thereto, as cash disbursements are charged to appropriate accounts in much the same manner as with going concerns. About the only marked differences between the accounting of the receiver and that of a going concern are the substitution of the Receiver's Equity account for the Capital account of the going concern, and the preservation by the receiver of the distinction heretofore commented upon between affairs of the estate as originally taken over and the addition thereto or deduction therefrom resulting directly from the receiver's administration.

If new books had been opened for the receiver, the closing entry therefor, to be made upon his surrender of the properties to the former owners, would be as follows (assuming for convenience the existence of the same state of affairs as used in the preceding entry for opening his books):

Liabilities of the Corporation	$100,000	
Cash		$ 5,000
Accounts Receivable		8,000
Inventories		30,000
Plant		45,000
Receiver's Equity		12,000

To close books of Wm. Smith, Receiver, X Company, as at date of his restoration of the estate to the former owners, in accordance with order of —— Court, dated —

In the illustration just given it is assumed that there has been no change in the company's position, and the old books would, therefore, be continued from the point of abandonment mentioned on page 1038 without any adjustment. If, however, as is more often the case, there has been a change in the position of the company resulting from the receivership, the old books may be brought into agreement with the conditions as at the date it resumes its activities, by the entry given below, wherein it is assumed that the conditions are as shown in the tabulation following the entry.

Cash	$ 5,000	
Plant	5,000	
Notes Payable	30,000	
Accounts Payable	30,000	
Accounts Receivable		$ 7,000

Inventories		$20,000
Surplus		43,000

To give effect to change in position of the X Company by reason of the activities of the receiver.

The conditions on which the entry is based are as follows:

	Position Shown By Books of Company as at Date of Appointment of Receiver	Position Shown By Receiver's Accounts as at Date of His Discharge	Changes in Position During Receivership	
			Increase	Decrease
Assets				
Cash	$ 5,000	$10,000	$ 5,000	
Accounts Rec.	10,000	3,000		$ 7,000
Inventories	50,000	30,000		20,000
Plant	50,000	55,000	5,000	
Good Will	10,000	......		10,000
	$125,000	$98,000	$10,000	$37,000
Liabilities				
Notes Payable	$ 55,000	$25,000		$30,000
Accounts Payable	45,000	15,000		30,000
	$100,000	$40,000		
Capital				
Capital Stock	$ 20,000	......		$20,000
Surplus	5,000	......		5,000
Receiver's Equity	......	$58,000	$58,000	
	$125,000	$98,000	$58,000	$85,000

The books of the receiver in the foregoing illustration would be closed by the two following entries:

X Company	$98,000	
Cash		$10,000
Accounts Receivable		3,000
Inventories		30,000
Plant		55,000
Notes Payable	$25,000	
Accounts Payable	15,000	
Receiver's Equity	58,000	
X Company		$98,000

To record the return of the estate of X Company to its owners, and thereby close the accounts of Wm. Smith, Receiver, discharged, as at . . .

Statement of Affairs

Book Values	ASSETS	Items	Expected to Realize	Shrinkages
$ 3,000.00	CASH		$ 2,500.00	$ 500.00
250,000.00	ACCOUNTS RECEIVABLE:			
	Good	$100,000.00	100,000.00	
	Doubtful—worth 50%	80,000.00	40,000.00	40,000.00
	Bad $75,000.00			
	Less—Reserve 5,000.00	70,000.00		70,000.00
		$250,000.00		
30,000.00	CLAIM AGAINST ACCOMMODATED PARTY (Estimated to yield 50%)		15,000.00	15,000.00
77,000.00	MERCHANDISE		50,000.00	27,000.00
70,000.00	MACHINERY		20,000.00	50,000.00
	SECURITIES PLEDGED WITH CREDITORS:			
	Partly Secured:			
55,000.00	Notes Receivable (deducted contra)	$ 55,000.00		
	Fully Secured:			
75,000.00	Buildings	$ 55,000.00		20,000.00
110,000.00	Land (at market)	125,000.00		*15,000.00
	Deducted contra	$180,000.00		
30,000.00	X Y Co. Stock (at market)	$ 35,000.00		*5,000.00
	Deducted contra	25,000.00		
	Excess over Claims against it		10,000.00	
125,000.00	GOOD-WILL			125,000.00
	TOTAL UNPLEDGED ASSETS		$237,500.00	
	Less—Preferential Creditors (see contra)		5,000.00	
	NET FREE ASSETS FOR UNSECURED CLAIMS		$232,500.00	
	DEFICIENCY (see Deficiency Account)		52,500.00	
$825,000.00			$285,000.00	$327,500.00

* Increments in value.

[25] Quoted in substance from Kester's Accounting, Theory and Practice, Vol. II.

FORM 7. Statement

A B C Company, December 31, 19—[25]

Book Values	LIABILITIES	Items	Expected to Rank
	UNSECURED CREDITORS:		
$249,000.00	Accounts Payable..................	$310,000.00	
	Less—Partly Secured..............	61,000.00	$249,000.00
	PARTLY SECURED CREDITORS:		
61,000.00	Accounts Payable..................	$ 61,000.00	
	Less—Notes Receivable Held as Security........................	55,000.00	6,000.00
	FULLY SECURED CREDITORS:		
25,000.00	Notes Payable.....................	$ 25,000.00	
	X Y Co. Stock Held as Security....	35,000.00	
	Excess of Security (see contra).....	$ 10,000.00	
175,000.00	Bonds Payable........ $175,000.00		
5,000.00	Accrued Interest on Bonds.............. 5,000.00		
		$180,000.00	
	Land & Buildings Held as Security	180,000.00	
	CONTINGENT LIABILITIES:		
30,000.00	Accommodation Notes..............		30,000.00
	Maker, now bankrupt, will pay 50%		
	PREFERENTIAL CREDITORS:		
1,500.00	Taxes..........................	$ 1,500.00	
3,500.00	Wages..........................	3,500.00	
	Deducted contra................	$ 5,000.00	
250,000.00	CAPITAL STOCK.....		
25,000.00	SURPLUS............................		
$825,000.00			$285,000.00

A B C Company will be able to pay, on the basis of the above showing, 81.6 cents on the dollar of all unsecured claims.

of Affairs

Where the receiver may have continued the books and accounts of the owners, it is necessary, in order to close the books at the termination of his custody of the estate and to reopen them for the former owners, to restore the Capital Stock and Surplus accounts and any intangible assets formerly carried by the corporation. For instance, on the premises stated on page 1041, the following entry would restore the accounts to a position identical with the conditions stated for the preceding entry, where the receiver had opened new books:

Good-Will	\$10,000	
Receiver's Equity	58,000	
Capital Stock		\$20,000
Surplus		48,000

In resuming operations the company would abandon the distinction maintained by the receiver between assets and liabilities of the original estate and those of his administration.

RECEIVER'S REPORTS.—Receivers are called upon to render various forms of reports from time to time. The reports most frequently called for, however, are those commonly known as the statement of affairs and deficiency account, and the realization and liquidation statement. The receiver or the accountant usually may give full play to his individual taste in the preparation of the receiver's reports.

Certain accepted forms are in evidence, however, and although any pronounced uniformity in these forms is to be found only in textbooks, where they are so presented primarily to illustrate certain theories of accounts, they are treated of at some length in succeeding pages.

The layman (the business man) often prefers to have the data usually embodied in the statement of affairs and the realization and liquidation statement, presented in a manner more closely following established balance sheet and profit and loss statement presentations. Therefore, some illustrations of the adaptation of the balance sheet and profit and loss presentations to these uses will be given.

Statement of Affairs—and Deficiency Account

PURPOSE OF STATEMENT OF AFFAIRS.—Proceedings in bankruptcy, or in insolvency, imply the financial embarrassment of the debtor. Quite naturally, therefore, when such proceedings are started, creditors are at once anxious to know the state of the debtor's affairs, particularly with reference to the amount they may expect to receive, or rather the amount of loss they will sustain in the final settlement of their claims. So they immediately demand a statement of the debtor's affairs, i.e., a statement showing the amounts expected to be realized from the assets, the amounts due to creditors in the order of their rank as to priority, and the ratio of the total assets available to general creditors to the total of their claims. In response to this demand, the accounting profession has developed the so-called statement of affairs, and its related deficiency account.

Specimens of the formal type of these statements are reproduced in Forms 7, 8, 9.

The statements of affairs, as illustrated in Forms 7, 9, differ from the conventional balance sheet and relative profit and loss statement, in that the balance sheet classifies the liabilities as to their liquidity, under normal conditions, and sets forth the net worth of the proprietorship; while the statement of affairs classifies them as to their legal status in regard to payment, and sets forth the

Deficiency Account A B C Company[26]
December 31, 19—

ESTIMATED SHRINKAGES IN VALUE:		ESTIMATED INCREMENTS IN VALUE:	
Cash	$ 500.00	Land	$ 15,000.00
Accounts Receivable	110,000.00	X Y Co. Stock	5,000.00
Claim against Accommodated Party	15,000.00	CAPITAL SUNK:	
Merchandise	27,000.00	Capital Stock	250,000.00
Machinery	50,000.00	Surplus	25,000.00
Buildings	20,000.00	NET DEFICIENCY to be borne by Creditors (see Statement of Affairs)	52,500.00
Good-Will	125,000.00		
	$347,500.00		$347,500.00

FORM 8. Deficiency Account

realizable value of assets (net free assets) available to general creditors of a liquidating concern.

Fully secured creditors are those holding mortgages or other security of a value equal to or in excess of the amount of their claims. **Partially secured creditors** are those holding security of a value less in amount than their claims. **Unsecured,** or **general creditors** are those holding no security of any kind. Stockholders or former proprietors will not share in the assets until and only when all liabilities are met, and a balance remains undistributed. Contingent liabilities are those which may become claims against the assets through the action or default of some third party.

The **essence of the statement of affairs** is:

1. Secured liabilities are stated net of the realizable value of the security.
2. Pledged assets are shown net of the liability which they secure.
3. Assets are stated at realizable values.
4. Liabilities, whether admitted by the debtor or not, are stated at the amount expected to be settled for.

Statements of affairs are frequently used to show free assets against which prospective general creditors would be extending credit. Likewise, they may be prepared for prospective investors or others desiring to know the company's position with respect to classes of creditors.

The **deficiency account** (Form 8) merely summarizes in statement form the causes of the inability to pay creditors in full. The term "deficiency account" may be given to an account to be used in closing the proprietorship accounts of an organization and bringing the accounts into agreement with the figures upon which a receiver opens his books.

Reserves, unless they are provisions for contingent liabilities, are deducted from book values in preparing statements of affairs.

Realization and Liquidation Account

PURPOSE OF ACCOUNT.—During the continuation of a receivership, as well as at its termination, the court, the creditors, and other parties at

[26] Quoted in substance from Kester's Accounting, Theory and Practice, Vol. II.

Statement of Affairs

Nominal Value	ASSETS			Expected to Realize	Shrinkage
$ 1,200	CASH (including uncollectible due bills)			$ 1,100	$ 100
6,050	ACCOUNTS RECEIVABLE, NET:				
	Good		$ 2,000	2,000	
	Doubtful		4,000	3,000	1,000
	Bad (Reserve $950)		1,000		50
	Total		$ 7,000		
	Less—Reserve		950		
	Net (as above)		$ 6,050		
5,000	NOTES RECEIVABLE (deducted contra)				
12,000	INVENTORIES			9,000	3,000
250	UNEXPIRED INSURANCE				250
18,000	BONDS OF X Y CO.:				
	Estimated Value		$14,000		4,000
	Less—Notes Payable (contra)		12,000	2,000	
8,000	LAND, estimated value		$10,000		*2,000*
22,000	BUILDINGS, cost	$27,000			
	Less—Reserve	5,000			
	Net	$22,000			
	Estimated Value		12,000		10,000
	Total Real Estate		$22,000		
	Less—Real Estate Mortgage (contra)		20,000	2,000	
8,000	MACHINERY, cost	$10,000			
	Less—Reserve	2,000			
	Net	$ 8,000		5,000	3,000
15,000	PATENTS				15,000
	Total Free Assets			$24,100	$34,400
	Deduct—Preferred Liabilities, Wages (contra)			500	
	Net Free Assets			$23,600	
	DEFICIENCY TO UNSECURED CREDITORS			14,400	
95,500				$38,000	

* Increase.

[27] Quoted extensively from Walton's Advanced Accounting.

FORM 9. Statement

X Company, December 31, 19—[27]

Nominal Value	LIABILITIES		Expected to Rank
$ 500	PREFERRED LIABILITIES:		
	Accrued Wages (deducted contra)		
20,000	FULLY SECURED LIABILITIES:		
12,000	Real Estate Mortgage (deducted contra)		
	Notes Payable (deducted contra)		
	PARTIALLY SECURED LIABILITIES:		
8,000	Notes Payable	$8,000	
	Less—Notes Receivable (contra)	5,000	$ 3,000
	UNSECURED LIABILITIES:		
35,000	Accounts Payable		35,000
10,200	CAPITAL STOCK		
9,800	Surplus		
	NOTE: X Company will be able to pay general creditors, on the basis of the above showing, 62 cents on the dollar.		
$95,500			$38,000

of Affairs

interest, desire to know the result of the receiver's activities in carrying on and winding up the estate, or in simply carrying it on. To meet this requirement there has been developed the so-called **realization and liquidation account.**

"There are three theories upon which the realization and liquidation account has been developed, viz., that it is (a) a summary ledger account, (b) the trustee's report to the court, or (c) merely a condensed summary of the trustee's activities."[28] ("Trustee" as the word is here used is interchangeable with "receiver.")

The form and preparation of this statement is illustrated by quoting in full a C.P.A. problem and its solution as presented by Seymour Walton in No. 18 of his "Advanced Accounting Lectures."

Problem.—The trial balance of the Yellow Pine Timber Co. on Jan. 1, 19—, was as follows:

Cash.......	$ 2,618.03	
Accounts Receivable.............	21,111.17	
Inventory......................	36,133.32	
Unexpired Insurance.............	559.44	
Plant and Equipment............	352,109.75	
Timber and Lands...............	551,539.31	
Preferred Claims................		$ 37,011.99
First Mortgage Bonds, 6's........		212,500.00
Bond Interest Accrued—6 months.		6,375.00
Unsecured Creditors.............		64,471.64
Capital Stock...................		400,000.00
Surplus......................		243,712.39
	$964,071.02	$964,071.01

Not being able to meet their current obligations, the Commercial Trust Co. was appointed receiver on Jan. 1, 19—.

The transactions under the receivership for the year following are hereby summarized:

Purchased Logs (half of which were paid for in cash, less cash discounts, and the balance on credit)................................	$ 9,646.22
Operating Expenses........................	202,972.81
Commissions..............................	4,214.14
Demurrage................................	326.00
Freight Inward............................	585.53
General Expense..........................	4,837.40
Salaries..................................	12,000.00
Shipping Expense.........................	13,574.10
Taxes....................................	1,421.00

All paid for in cash.

Allowance for stumpage cut amounting to $50,000 was credited to Timber account. Interest on bonds to Dec. 31, 19—, was paid in full and the outstanding bonds reduced to $200,000, Dec. 31, 19—, by paying off $12,500 at 101. Sales amounted to $45,000 gross, of which $300,000 was received in cash as net payment by customers

Freight Allowance to Customers..............	$70,510.00
Discounts Allowed..........................	556.33
Discounts Received.........................	500.00
Profit from Commissary.....................	5,000.00
Sundry Income.............................	3,500.00

Accounts receivable of Jan. 1, 19—, realized $20,000 net. Preferred claims were paid in full. Depreciation of $3,500 was allowed on plant and equipment. Unexpired insurance on Dec. 31, 19—, amounted to $125. Inventories, $40,000.

[28] Newlove, C. P. A. Accounting, Vol. II.

Prepare Realization and Liquidation Account, Cash Account and Balance Sheet, Dec. 31, 19—. Prepare a Receiver's Profit and Loss Account, proving gain shown by the Realization and Liquidation Account, and showing all of the elements making up the net amount.

Solution to problem is given on pages 1050 to 1054.

"CHARGE AND DISCHARGE" FORM OF REPORT.—A common form of report for filing with the court is the charge and discharge form:

The receiver charges himself with:

1. Assets at date of receivership, or last report.
2. Additions to such assets since discovered.
3. Increments upon realization of such assets.
4. Amounts realized from sale of receiver's certificates.
5. Increases in the amount of receiver's liabilities.
6. Gross income from his operation of the properties.

The receiver credits himself with:

1. Preferred or other liabilities of the company paid.
2. Decreases in assets as taken over.
3. Losses on realization of assets.
4. Expenditures on fixed assets.
5. Receiver's indebtedness paid.
6. Expenses of operation of the properties.
7. Expenses of receivership.
8. Dividends paid in distribution.
9. Assets at close of period.

The foregoing form is frequently accompanied by balance sheets as at the beginning and close of the period reported, a profit and loss statement, and a statement of cash receipts and disbursements.

It occurs frequently, too, that the demand for a statement may be satisfied by submitting only a balance sheet and statement of operations. These may follow the lines of the companion statements in the preceding illustration of the C. P. A. problem.

Receivers, and their accountants, are called upon at intervals to submit numerous **special reports.** These reports may be, for instance:

1. List of creditors. (Names and addresses, and full particulars of their claims and ranks, should be given.)

2. Reports on relations with banks and other special creditors—bondholders, licensors, vendors holding commitments, etc.

3. Reports on situations at branches, agencies, and subsidiary companies; stock issues; inventory situations, etc.

4. Reports on systems of accounting methods and procedures, involving usually a survey of the systems of the old organization with a view to modifications for adoption by the receiver.

5. Special surveys and reports on operating results for past periods, with a view to ascertaining the faults of the business or its potentialities.

6. Budgetary reports, setting forth the funds and the sources of funds available for use by the receiver, and funds required to continue or wind up the business, or any phase of it. Special attention is given in these cases to the requirements for liquidating large inventories of materials in raw or in process, as by purchasing such additional materials and supplies as may be required to convert the inventories into marketable products.

7. Statements to form the basis of a reorganization plan and agreement. In these cases the claims to be met are listed alongside of the proposed readjustment—as stock to be issued therefor.

Solution.— The Yellow Pine Realization and January 1, 19—, to

ASSETS TO BE REALIZED:		
Accounts Receivable	$ 21,111.17	
Inventory	36,133.32	
Unexpired Insurance	559.44	
Plant and Equipment	352,109.75	
Timber and Lands	551,539.31	$ 961,452.99
ASSETS ACQUIRED:		
Accounts Receivable, new		450,000.00
SUPPLEMENTARY CHARGES:		
Purchases, Logs	$ 9,646.22	
Operating Expenses	202,972.81	
Commissions	4,214.14	
Demurrage	326.00	
Freight Inward	585.53	
General Expense	4,837.40	
Salaries	12,000.00	
Shipping Expense	13,574.10	
Taxes	1,421.00	
Bond Interest, 19—	12,750.00	
Freight Allowances	70,510.00	
Discount Allowed	556.33	
Premiums on Bonds Paid	125.00	333,518.53
LIABILITIES LIQUIDATED:		
Bond Interest Accrued, Jan. 1, 19—	$ 6,375.00	
First Mortgage bonds	12,500.00	
Preferred Claims	37,011.99	
Accounts Payable, new	4,823.11	60,710.10
LIABILITIES NOT LIQUIDATED:		
First Mortgage Bonds, 6's	$200,000.00	
Unsecured Creditors, old	64,471.64	
Accounts Payable, new	4,823.11	269,294.75
GAIN ON REALIZATION		74,302.54
		$2,149,278.91
ASSETS NOT REALIZED—BALANCES DOWN:		
Plant and Equipment, net of Depreciation	$348,609.75	
Unexpired Insurance	125.00	
Inventories	40,000.00	
Timber and Lands	501,539.31	
Accounts Receivable, new	78,933.67	

FORM 10. Statement of Realization

Timber Company
Liquidation Account
December 31, 19—

LIABILITIES TO BE LIQUIDATED:			
Preferred Claims		$ 37,011.99	
First Mortgage Bonds		212,500.00	
Bond Interest Accrued		6,375.00	
Unsecured Creditors		64,471.64	$ 320,358.63
LIABILITIES INCURRED:			
Accounts Payable for Logs			9,646.22
SUPPLEMENTARY CREDITS:			
Sales		$450,000.00	
Profit from Commissary		5,000.00	
Sundry Income		3,500.00	
Discounts Received		500.00	459,000.00
ASSETS REALIZED:			
Accounts Receivable, old		$ 20,000.00	
Accounts Receivable, new		371,066.33	391,066.33
Cash	$300,000.00		
Allowance	70,510.00		
Discount	556.33		
	$371,066.33		
ASSETS NOT REALIZED:			
Plant and Equipment		$352,109.75	
Less—Depreciation Reserve		3,500.00	
		$348,609.75	
Unexpired Insurance		125.00	
Inventories		40,000.00	
Timber and Lands		501,539.31	
Accounts Receivable, new		78,933.67	969,207.73
			$2,149,278.91
LIABILITIES NOT LIQUIDATED—BALANCES DOWN:			
First Mortgage Bonds		$200,000.00	
Unsecured Creditors, old		64,471.64	
Accounts Payable, new		4,823.11	

and Liquidation Account.

The Yellow Pine Timber Company

Receiver's Cash Account

January 1, 19—, to December 31, 19—

Balance, Jan. 1, 19—	$ 2,618.03	Accounts Payable, new (for logs)	$ 4,323.11
Accounts Receivable, old	20,000.00	Operating Expenses	202,972.81
Accounts Receivable, new	300,000.00	Commissions	4,214.14
Profit from Commissary	5,000.00	Demurrage	326.00
Sundry Income	3,500.00	Freight Inward	585.53
		General Expense	4,837.40
		Salaries	12,000.00
		Shipping Expense	13,574.10
		Taxes	1,421.00
		Interest Accrued at Jan. 1, 19—	6,375.00
		Bond Interest, 19—	12,750.00
		Bonds and Premiums	12,625.00
		Preferred Claims	37,011.99
		Balance, Dec. 31, 19—	18,101.95
	$331,118.03		$331,118.03

FORM 11. Receiver's Cash Account

The Yellow Pine Timber Company
Balance Sheet
December 31, 19—

ASSETS			LIABILITIES		
Plant and Equipment	$352,109.75		First Mortgage Bonds, 6's		$200,000.00
Less—Reserve for Depreciation	3,500.00	$348,609.75	Unsecured Creditors, old		64,471.64
Timber and Lands		501,539.31	Accounts Payable, new		4,823.11
Inventories		40,000.00			$269,294.75
Accounts Receivable, new		78,933.67	Capital Stock	$400,000.00	
Cash		18,101.95	Surplus	318,014.93	718,014.93
Unexpired Insurance		125.00			
		$987,309.68			$987,309.68

FORM 12. Balance Sheet

The Yellow Pine Timber Company

Receiver's Profit and Loss Account—January 1, 19—, to December 31, 19—

Inventory, Jan. 1, 19—	$ 36,133.32	Sales	$450,000.00	
Purchases, Logs	9,646.22	*Less*—Freight Outward	70,510.00	$379,490.00
Freight Inward	585.53	Inventory, Dec. 31, 19—		40,000.00
Demurrage	326.00	Profit from Commissary		5,000.00
Stumpage Cut	50,000.00	Sundry Income		3,500.00
Operating Expenses	202,972.81			
Depreciation, Plant, and Equipment	3,500.00			
Shipping Expense	13,574 10			
Commissions	4,214.14			
General Expense	4,837.40			
Salaries	12,000.00			
Taxes	1,421.00			
Insurance	434.44			
Net Profit on Operations	88,345.04			
	$427,990.00			$427,990.00
Discounts Allowed	$ 556.33	Net Profit on Operations		$ 88,345.04
Bond Interest	12,750.00	Discounts Received		500.00
Bond Premium	125.00			
Net Profit of the business, exclusive of Loss on Realization	75,413.71			
	$ 88,845.04			$ 88,845.04
Loss on Realization Accounts Receivable	$ 1,111.17	Net Profit-down		$ 75,413.71
Net Profit of Receivership	74,302.54			
	$ 75,413.71			$ 75,413.71

FORM 13. Receiver's Profit and Loss Account

8. Balance sheets giving effect to proposed plans of readjustment or reorganization are often required. These balance sheets should give effect to the proposed transactions, but should clearly state on their face that such transactions have been so applied. For instance, if a company were to issue new stock of a par of $100,000, to be sold for 90, the balance sheet in that particular should read as follows:

Balance Sheet

(After giving effect to proposed sale of $100,000 par value of capital stock for $90,000)

Cash	$ 90,000	Capital Stock	$100,000
Deferred Discount on Capital Stock	10,000		
	$100,000		$100,000

SECTION 21

FIDUCIARIES

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 21

FIDUCIARIES

Fundamentals of Fiduciary Relations

FIDUCIARY'S OBLIGATION TO ACCOUNT.—A **fiduciary** is defined by Webster as "one who holds a thing in trust for another; a trustee." All persons who have legal possession of property which belongs to others are fiduciaries, and as such are under legal obligation to account for trust property which has passed through their hands. The more important fiduciary relationships, such as those of administrators, executors, testamentary trustees, guardians, receivers, and assignees, are conducted under supervision of some court, and are concluded only after the rendering of an accounting satisfactory to the court. The keeping of proper records to facilitate preparation of the report upon which discharge will be granted is therefore essential.

THE PERSONAL REPRESENTATIVE.—The person appointed by the court to settle the estate of a decedent is known as a **personal representative.** If the decedent left a will in which he named his personal representative, that person, if accepted by the court, is known as an **executor.** Otherwise the personal representative is called an **administrator.**

The personal representative's title to the **personal assets** of the decedent dates back to the time of death, though his appointment and qualification have not occurred until later. The **real estate** of the decedent, if the estate is solvent, descends to the heirs or the devisees without passing through the hands of the personal representative.

The **first duty of the representative** is to take possession of all the personalty which belonged to the decedent. He is required to inventory that property and to have it appraised, after which he sells the personalty in order to pay the debts of the decedent and to settle legacies. His procedure in all these steps is governed by law. He must use extreme care to follow the law in all particulars.

TESTAMENTARY TRUSTEE.—A will may provide that certain property or investments shall be held in trust for a certain period during which the income therefrom goes to one or more persons, and at the end of which period the property or investments pass to the same or other persons. The person who receives the income is called the **tenant** or **beneficiary;** he who receives the property at the expiration of the trust is called the **remainderman.**

When trusts are created by will, the trustee may be a different person from the executor, but the executor usually becomes the trustee, and it becomes his duty to manage the trust property; but his functions as executor and as trustee are separate functions which must not be confused. **As executor** he winds up the affairs of the decedent, collecting assets, paying bills, and distributing legacies which are independent of the trusts. He transfers the trust funds and the income therefrom to himself as trustee, and **as trustee** delivers the income

to the beneficiaries. At the end of the period of executorship he makes his report to the court, and is discharged from that responsibility, but continues to serve in the capacity of trustee during the period for which the trust was created.

Corpus and Income

CORPUS AND INCOME DEFINED.—All transactions of estates are separated into two main groups, called **transactions as to corpus** and **transactions as to income.** **Corpus** is the Latin word for "body," and as used in connection with estates means the principal or body of an estate, the whole value of what is actually left by the decedent at time of death. What is afterward derived from or earned on that body, corpus, or principal, is called **income** of the estate. Good accounting requires that in all cases the records show what property was left by decedent, that is, the body, corpus, or principal of the estate, and what is thereafter gained or lost in handling the property.

All assets that would be included in a true and comprehensive balance sheet for the decedent at midnight following his death are corpus, and all liabilities that would appear in that balance sheet must be met out of corpus. Also, funeral expenses and all legitimate expenses of administration, from expenses of probate to those of the final accounting, are chargeable against corpus. Losses of part of the corpus due to casualty and theft are deductible from corpus itself, as is also a failure to realize the appraised value of an asset.

If a **piece of real estate** should properly be listed among the assets of the estate, that piece of real estate is corpus. No matter at what amount it is appraised or for what amount it is sold, the proceeds of the sale are corpus. Establishment of some large industry near a farm, years after death of an owner of the farm, who has included it in a trust estate, may materially increase the value of the holdings above the figure at which they were appraised and entered on the books of the estate; but although that increase is a gain of the estate after the establishment of the trust, it is not income to the life-tenant, but an increase in corpus. All assets of decedent at date of death are corpus for whatever values may ultimately be realized.

Any **interest receivable** by the estate which had accrued prior to midnight of date of decedent's death, is corpus, since it was an (accrued) asset of decedent at time of death. The same principle applies to any other income accrued at the time of death.

Dividends are ordinarily not considered as income until actually declared, because they do not accrue. The time when the corporation earned the profits out of which dividends are paid does not matter; courts have generally[1] held that a **dividend declared after death** belongs to income, because profits of a corporation are property of the corporation until the directors in their discretion declare a dividend. On the other hand, a **dividend declared before death** belongs to corpus, because in law a dividend, even on cumulative preferred stock, is considered earned by the recipient at date of declaration, though perhaps not paid for some time afterwards.

The rule is different, however, in case of **stock dividends** and of **cash dividends** of such unusual size that it is evident that a surplus accumulated over a period of years is being distributed. Courts generally include as corpus any part of

[1] In Pennsylvania and a few other states the rule is to apportion dividends as of time when income was earned by the corporation, and to give the life-tenant only so much as has been actually earned since death of testator

such dividends which accumulated prior to decedent's death, but allow as income any interest arising from this amount.[2]

Corporations often allow stockholders the privilege of absorbing among themselves increased issues to be floated. These **rights,** being transferable, are often valuable and may be sold. Proceeds of sale of such rights are corpus just as the new issue of stock itself would be corpus if the executor chose to avail himself of the right to subscribe and thus invest idle or less profitably invested funds of the estate.

Proceeds of fire insurance policies, whether in form of premiums returned on policies taken out by decedent and canceled by the personal representative, or of money paid to personal representative to cover a fire loss on property owned by the estate or on which the estate holds a mortgage, are always corpus.

Proceeds of life insurance policies payable to decedent or to estate, whether received in a lump sum as a result of decedent's death or due as the last payment of an annuity formerly payable to decedent, are corpus. Classification of proceeds of other forms of insurance may be determined on same principles.

Livestock borne after date of demise are income. **Growing crops** belong to the corpus when land has been sold by decedent with a reservation of the crops. They are income when land becomes part of a trust for a life-tenant. When land on which they are growing is not to be held in trust, they go with the land.

If a will specifies that certain **gifts** made by testator during his life are to be considered as advances and deducted from legacies, amounts of such advances are part of the corpus.

Many partnership agreements specify that the **estate of any partner** shall be entitled to that partner's share of profits earned for a certain period after his death, in which case these earnings are part of corpus.

DEDUCTIONS FROM CORPUS AND INCOME.—The principle regarding liabilities is in harmony with that regarding assets. Anything which was owed by decedent, including accruals to date of death, is a charge against corpus. But in addition to such liabilities there must be charged against corpus the expense of winding up affairs of decedent, including cost of caring for assets until distributed (but not including cost of earning or collecting income from those assets, which is a charge against income).

Principal deductions of this nature are funeral and burial expenses and cost of administering the estate. **Funeral expenses** include undertaker's bill, cost of cemetery lot, a suitable tombstone, and cost of funeral services. They include also transportation of the person bringing body to place of burial, and sometimes an allowance for mourning to be worn by relatives of deceased.

All **legitimate expenses of administration** are charged against corpus. These include office rent and other necessary office expenses, salaries, attorneys' and accountants' fees, and expenses of litigation in estate matters, including will contests. The personal representative is responsible for assembling and caring for the assets, and is personally liable for any neglect, but all expense properly incurred is chargeable against the estate and is a deduction from corpus.

The distinction between administration expenses and charges against income is not easy to define, but may be expressed by saying generally that the expense of collecting and handling the income is chargeable against income, whereas any expense occasioned by the assets themselves is chargeable against corpus. Nearly all the expense of the personal representative is against corpus, while most of that incurred by the trustee is against income. Of course, interest

[2] Conyngton, Business Law, Vol. II, p. 519.

expense accrued after decedent's death is chargeable against income, because the income-producing assets would be reduced if the indebtedness on which the interest was incurred were paid off.

In most if not all states, certain property and usually some amount of ready money is set aside by law for use of the **widow and minor children.** Whatever the statute allows, if used for this purpose, is a charge against corpus. All **legacies** are paid out of corpus (except that if no trusts are created the residuary legatee receives the income also). But payments of these legacies are not considered as deductions from corpus, serving rather to dispose of it after its amount has been finally ascertained.

The **inventory of the estate** should include, so far as possible, all accruals; but the accountant will probably have to make numerous adjustments thereafter to pick up omissions and to correct entries made as a result of incorrect information. The **line dividing corpus from income** is not so plainly drawn as always to be readily apparent. In many cases it requires the court's interpretation of facts in a particular case to decide to which account credit should be given.

In computing and setting up accruals, the general rule is that the expression "to the date of the death of the testator" means to and including that day, so that items earned and dividends declared at any hour on day of death are a part of corpus.

In case of an intestate a trust cannot be created except by operation of dower or courtesy rights. The separation of corpus from income in such cases might seem unnecessary. But the separation in the case of estates of sufficient size to present any accounting problems is wise because inheritance tax laws apply only against the corpus, and because the administrator should be in a position to show easily what gains and losses have occurred as a result of his management and what are due to improper appraising.

Accounting for Personal Representatives

STATUTORY REQUIREMENTS.—The **ultimate purpose** of all estate accounting is the fulfilling of a legal obligation which rests on a fiduciary to account properly for all money or other property which passes through his hands. For this reason any system of accounting devised for a fiduciary should be planned to enable him to prepare his final accounting without difficulty and at same time to handle his current work without unnecessary labor. **Most states** do not prescribe by law any form of estate bookkeeping even where they do prescribe a form of final accounting; but if the fiduciary's records are not so kept as to make it possible for him to prepare the final accounting readily, he is often charged personally with expense of drawing off that account.

The **fiduciary's accounting** is submitted to the court which appointed him, and is usually made after the assets have been collected and debts of decedent and expenses of administration have been paid, and such payments as the executor has found advisable have been made on account of legacies. **Its purpose** is to show amount of cash and property received by the representative, disposition he has made of it, and balance, if any, remaining in his possession. The fiduciary is required to make an affidavit that to the best of his knowledge and belief the statement is a full and true account.

Usual procedure is for the personal representative to present the account to the court with a petition that it be allowed, whereupon the court gives notice to all persons interested in the estate that on a fixed day the account will be

judicially considered. Prior to that day, the account on file with the court is open to inspection. After examining the account on the day named and considering any objections raised against it, the court renders a decision allowing, or refusing to allow, the account. **If account is not allowed,** one satisfactory to the court must be presented. **If court is satisfied** with the accounting, it issues a decree of distribution directing the executor to make distribution of estate assets then remaining in his hands as set forth in the decree.

FORM OF THE ACCOUNT.—It is rarely that the form of account is legally prescribed, but the statute usually states broadly what the account shall show. This has resulted, in practice, in **special forms for each state.** These forms answer the local statutes and can usually be secured from the clerks of the probate court. It always saves work in such matters to follow precedents and use whatever forms the local court approves. Some of these forms are very simple, while others are rather complex and go into great detail, but all are based on an accounting for receipts and disbursements by schedules showing transactions by classes.

The accounts which are to be kept on the books of an estate should be chosen with the final accounting always in mind, and should be so selected that the information required may be compiled with least effort. The **classification of receipts and disbursements** to be used in the final accounting should be followed in the books. **Each schedule of final accounting** should be represented by an account on the books, and the name and even the standard number of the schedule may form part of the title of the account.

INFORMATION NEEDED FOR FINAL ACCOUNTING.—Because of variance between forms in use in different states, it is impossible to furnish a scheme of accounts which will give information necessary for all without going into greater detail than is required by some, but the following is fairly representative:

As to corpus:

Charges to administrator:

1. Amount of inventory as appraised.
2. Assets discovered after filing of inventory.
3. Gain from realizing on inventory.

Credits to administrator:

4. Loss from realizing on inventory.
5. Assets not realized upon.
6. Funeral and administration expenses paid.
7. Payments on debts of decedent.
8. Distribution of cash and other assets.
9. Balance of corpus cash on hand.

As to income:

Charges to administrator:

10. Amount of income from operation of estate.

Credits to administrator:

11. Losses of income.
12. Expenses chargeable against income.
13. Distribution of income.
14. Balance of income cash on hand.

Under the rule that one account should be maintained for each classification which will be needed for the final accounting, the accounts which would result from above list of schedules are·

Corpus Group

1. Inventory.
2. After-Discovered Assets
3. Gain on Realization
4. Loss on Realization
5. (No account appears for the item "assets not realized upon," because it is by nature the residue or closing balance left in the Inventory account.)
6. Funeral and Administration Expenses
7. Debts of Decedent
8. Distribution of Cash and Other Assets
9. Cash

Income Group

10. Income
11. Losses of Income
12. Expense against Income
13. Distribution of Income

No second Cash account is needed for income cash, as it is never difficult to determine how much of the cash on hand belongs to corpus and how much to income.

This number of accounts does not, however, quite exhaust the necessities. The list may seem to include assets and liabilities, income and expense. But in double-entry bookkeeping there is another group, net worth or proprietorship accounts, i.e., Capital, Capital Investment, Capital Stock, Surplus, etc., as may be required under varying circumstances. The place of this group in the scheme of estate accounts is taken by an account known as "Estate Corpus." Whenever books are closed, the balance of this account is amount of the estate in accordance with the various valuations used. Like proprietorship accounts it is necessarily a credit account, showing extent of the accountability of the fiduciary.

INVENTORY.—The accounting of the personal representative is based on the inventory of the estate, the taking of which is one of his first duties. This inventory takes note of assets only, no reference being made to liabilities. It is a list and appraisal of all items composing corpus, classified and valued as required by the state law.

In many states the inventory does not ordinarily include real property, which does not come into the hands of the representative, passing immediately to devisees or heirs-at-law; but the inclusion of all property is required in the inventory used in connection with the federal transfer tax. For this reason there is now being favored the practice of letting the inventory which is made for all purposes include real estate at gross value, any mortgage indebtedness being considered a debt of the decedent.

LIABILITIES.—The ordinary practice in handling accounts of a decedent is not to set up the liabilities of the decedent on the books. Debts appear only through their payment, when Debts of Decedent account is charged. No offsetting credit appears until at time of closing books, when the representative balances this account by closing it into Estate Corpus.

This is done on the theory that the books indicate the responsibility of the fiduciary rather than the net worth of the estate, and is a survival of the cash methods used in all legal accounting. There is, however, no good reason why the liabilities should not be set up in an Approved Claims account if desired, and in large estates such an accrual is usually preferable.

USES OF ACCOUNTS.—The general scheme for handling transactions under the above outline of accounts is as follows:

At the beginning of administration the estate assets are debited to Inventory, their total amount being credited to Estate Corpus. The amount of cash in the inventory is credited to Inventory and debited to Cash.

Subsequent receipts of cash by the administrator are debited to Cash. If they are from the sale of assets included in the inventory, they are credited to Inventory at appraised value, any increase therein being credited to Gain on Realization, or any loss thereon debited to Loss on Realization. Receipts from sale of assets which, although they belonged to decedent at the time of death, were for any reason not included in the inventory, are credited to Assets Not in Inventory. Receipts of income earned by estate assets during administration are credited to Income.

Payments of cash or distributions of assets made by the administrator are credited to Cash or Inventory. Payments made on account of debts existing at time of decedent's death are charged to Debts of Decedent, but if debts of the decedent are set up on the books by a debit to Debts of Decedent and a credit to Approved Claims, the debit at time of payment will be to Approved Claims.

Payments of expenses that are deductions from the corpus of the estate are debited to Funeral and Administration Expenses. Distributions of cash and other assets are charged to the account of that name, and amounts of income cash distributed are charged to Distribution of Income. Expense incurred in earning the income on the estate assets is debited to Expense against Income, and losses of income through theft, fire, etc., are debited to Loss on Income.

METHOD OF CLOSING.—When an accounting is to be made, the books should be closed by:

1. Crediting Estate Corpus and debiting the corpus gain accounts (Assets Not in Inventory; Gain on Realization) with amounts sufficient to balance the latter.
2. Debiting Estate Corpus and crediting the corpus loss accounts (Loss on Realization; Funeral and Administration Expenses; Debts of Decedent; Distribution of Cash and Other Assets) with amounts sufficient to balance the latter.
3. Debiting Income and crediting the income loss accounts (Loss on Income; Expense against Income; Distribution of Income) with amounts sufficient to balance the latter.

FURTHER SEPARATION POSSIBLE.—In the above outline the number of accounts suggested has been kept almost at a minimum, but because the preparation of income tax returns requires an analysis of the income, the books must show its source in a way that will indicate the nature of the transactio from which it results. In the same way, for income tax purposes the expenses must be analyzed so that in the returns the schedules accounting for the deductions from gross income may properly be filled out.

In large estates it is much easier to open separate accounts for all items of most frequent occurrence instead of lumping all income into one Income account and all expense into the Funeral and Administration Expenses account and the expense against Income account.

ADDITIONAL ACCOUNTS NEEDED BY EXECUTORS.—Accounting by executors differs from that of administrators only to the extent that the recording of the slightly more complex duties of the executor requires more kinds of entries. The fundamental principles are the same for both; the same scheme of accounts

is used; and the general form of final accounting is the same. The differences result from the fact that the executor is operating under a will which probably sets aside specific legacies and may provide for the creation of trusts, whereas the administrator merely realizes and distributes.

To record this additional information, certain accounts are used by executors in place of the Distribution of Cash and Other Assets account, and Distribution of Income account of the administrator. These are:

1. Specific Legacies Distributed, debited with appraised values of specific legacies distributed.
2. Payments on General and Demonstrative Legacies, debited with all payments of corpus cash and inventory value of all assets turned over on account of general and demonstrative legacies.
3. Payments of Principal to Trustee, debited with all payments of cash and inventory value of all assets turned over out of corpus to trustee.
4. Distribution of Income, debited with all payments of income cash directly to legatees when no trusts are created.
5. Payments of Income to Trustee, debited with amounts of income paid by executor to trustee.

In closing the books of the executor when an accounting is to be made, the first three of the above accounts are credited with amounts sufficient to balance them, the corresponding debit being to Estate Corpus, and the last two are credited with the amounts necessary to balance them, Income account being debited.

BOOKS TO BE KEPT BY ADMINISTRATORS.—The form of books in which financial records of estates are kept is not so material as is correct use of accounts. **Probate accountancy** presents to the commercial bookkeeper a new nomenclature for the nominal accounts and some new practices, but so long as these are understood and properly handled, the mechanical vehicles used for recording of transactions are a matter of personal preference. No objection can be raised to the forms used in any system if through them one accomplishes the desired result.

For the administrator the greatest efficiency is secured through use of a **cash journal** of such complete distribution that each general ledger account is carried in a separate column therein, making posting to a general ledger unnecessary inasmuch as the accumulations can be carried forward perpetually in the cash journal. (See Form 1.) The trial balance is thus taken directly from the book of original entry, which thus becomes cash book, journal, and ledger in one. The accounts of trust companies are coming to be generally carried on such a form as this.

Such a book is called a "self-posting ledger," a "journal ledger," and various other names, but of all names suggested, "synoptic" is probably best, being short as well as descriptive. Any double-page columnar sheet of sufficient columns (20 to 24 ordinarily) serves the purpose. Care must be taken to use bound books in states which forbid use of loose-leaf books by fiduciaries.

ADVANTAGES OF SYNOPTIC.—The synoptic has three marked advantages:

1. It is easy to learn to use. It has all the ease of single-entry with none of its disadvantages. The bookkeeper who has never acquired the cash journal habit may prefer to use old-fashioned cash book and journal, making postings to his ledger in the usual way. If, however, he has begun to use an "analytical" or columnar cash book (one in which several columns are provided for entry of receipts or disbursements directly to the most commonly used accounts), he will have no trouble in adapting himself to this much less tedious method. If

	Date	Name and Item	Check No.	Cash		Inventory		Loss on Realization	Gain on Realization	Assets Not in Inventory	Debts of Decedent	
				Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Cr.	Dr.	
1												1
2												2
3												3
4												4
5												5
6												6
Etc.												Etc.

	Funeral and Administration Expenses		Distribution of Corpus	Estate Corpus	Inheritance Tax Suspense		Savings Accounts		Income	Loss on Income	Expense against Income	Distribution of Income	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Cr.	Dr.	Dr.	Dr.	
1													1
2													2
3													3
4													4
5													5
6													6
Etc.													Etc.

FORM 1. Synoptic for the Accounts of an Administrator (left and right halves)

the person who is to keep the accounts is not a bookkeeper by occupation, and has acquired no definite habits which the bookkeeper so often finds it hard to break, he will find method outlined much easier to learn than the use of the older separate cash book, journal, and ledger.

2. It involves less work than any other method. Fewer pages have to be turned. An entry made in one record is not recopied in others, for the use of the synoptic makes general ledger posting unnecessary. All the accounts are carried on the double page and the difference between the debit and credit totals of any account at any time is what would be the ledger balance of that account.

3. It makes the understanding of entries and the explanation of them to other persons much easier than the use of the cash book, journal, and ledger, because all transactions of a period are before one's eyes at a glance, with their effect on the ledger accounts, the condition of all of which can be readily grasped without turning pages.

Where a journal is used there is a tendency to exclude the information from the ledger accounts, and the necessity for constant reference hampers an accountant when he desires to extract information, while it reduces what should be perfect simplicity to hopeless confusion, when the accounts are submitted to an executor or legatee.[3]

ARRANGEMENT OF COLUMNS.—A satisfactory arrangement of columns in the synoptic is shown on Form 1. Note that most accounts are provided with only one column, either debit or credit, but in these accounts there will seldom be any entries of an opposite nature. Such as occur may be entered in red ink.

It is wise, however, to provide for **refunds of overpayments** on administration expenses, which may be somewhat numerous. The personal representative may have paid rent in advance and, upon not needing the property for the full period, may receive a refund. Such a transaction would be recorded as Cash/Funeral and Administration Expenses.[4]

To accommodate such entries the latter account on the synoptic is provided with two columns, second of which is for credit entries.

The term Cash account as used herein is generic. In practice it is best to have a separate account in the general ledger, or pair of columns in the synoptic, for each bank account which is to be used for current depositing and checking purposes. Inactive bank accounts, such as savings accounts, may, if desired, be totaled together in one ledger account, or carried on the synoptic in one pair of columns.

BOOKS FOR EXECUTORS.—For executors as for administrators, any form of double-entry records in which the information required may be recorded is adequate. The separate ledger, cash book, and journal are preferred to the synoptic, which is not so well suited to accounts of executors because of the number of columns required for the greater number of accounts. A cash journal and general ledger can be used by executors to advantage.

OTHER BOOKS.—The fiduciary should record in a **diary** the details of all important events, so as always to have at hand memoranda from which to refresh his memory when necessary. The notations in this book should be cross-referenced to entries on the books of account and to the folios of other estate files or public documents. By this practice much time is saved in locating records which have to do with the notations.

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[3] Caldicott, Executorship Accounts.

[4] Journal and cash book entries will be indicated in the above conventional manner, which indicates in this case a debit to Cash and a credit to Funeral and Administration Expenses.

Examples of the information which should appear in the diary are:

1. Date of reading of will.
2. Steps taken by personal representative before formal appointment.
3. Date of employment of counsel and reasons for choice, with notations as to agreement for compensation.
4. Efforts to locate heirs or proper distributees.
5. Efforts to collect assets.
6. Details of conversations with attorneys, inheritance tax officers, etc.
7. Dates of signing of various court orders, such as that requiring advertising for claims.

It is a good practice to paste in the diary printed copies of all notices, advertisements, and announcements incident to the probate and subsequent procedure.

Innumerable **other records** might be suggested. Memoranda should be kept showing when interest, rents, etc., both receivable and payable, are due. Larger estates require the use of investment record books, notes payable registers, etc. As none of these are in any way peculiar to estate accounting they are not discussed in detail.

THE REALIZATION ACCOUNT.—Whatever style of books is adopted, there should be kept as a subsidiary record a list of the inventory items with the appraised value of each. Maintaining general ledger accounts with each group of inventory assets does not serve the purpose, because the schedule required for the final accounting must, to be complete, show the realization on each item in the inventory. Even if this were not so, it is necessary to keep this record in some form for convenient reference as to what is unsold and to facilitate an audit of the accounts, whether by an interested person or a professional accountant.

This detail of the realization on assets is most easily shown by a **schedule in 6 columns** (see Form 2), the 1st containing the value of each asset (including cash) as appraised in the inventory; the 2nd showing the amount of cash realized from each asset; the 3rd, the difference between the 1st and 2nd if the amount in the 2nd column opposite the item is lower than the amount in the 1st; the 4th, that difference when the amount in the 2nd column opposite the item is higher than that in the 1st; and the 5th, the appraised value of assets distributed without realization, or of deferred expenses included in the inventory and later charged off.

When desired to close the books it is necessary to carry over to the 6th column the appraised value of all assets which have not been disposed of. The total of this column, plus the totals of the 2nd, 3rd, and 5th, minus the total of the 4th, must equal the total of the 1st.

The realization account thus prepared has been spoken of above as a "subsidiary" record. It is subsidiary to the Inventory account on the general ledger. This means that the difference between the total debits and the total credits in the realization account must always equal the balance in the Inventory account. In other words, the sum of the totals of entries made in the 1st and 4th columns at any date, minus the sum of the totals of the 2nd, 3rd, and 5th, would be the total of the 6th if it were filled in, and also the balance in the Inventory account on the general ledger or synoptic at the same date, since that is the appraised value of assets unsold at that date.

In the same way the 3rd column is subsidiary to the Loss on Realization account, and the 4th to the Gain on Realization account.

The keeping of the realization account in addition to the careful record of the synoptic or other books does not involve unnecessary duplication. The reali-

Estate of R. C. Templeton—Realization Account

	Sold to	Date of Order Authorizing Sale	Synoptic Folio	Appraised Value	Amount Realized	Loss on Realization	Gain on Realization	Distributed or Charged to Expense	Assets Not Disposed of
INVENTORIED ASSETS									
Checking account in First National Bank			1	$ 5,630.07	$ 5,630.07				
Savings account in Faithful Trust Co.			1	3,000.00				$ 3,000.00	
Accrued interest thereon			1	35.00				35.00	
Account due from C. S. Hashey				2,469.90					$ 2,469.90
Account due from Chester Magazine Co., $367.51				no value					no value
Note of Charles C. Labanon				762.20					762.20
Accrued interest thereon				145.83					145.83
Policy No. 11,736, Fellowship Life Insurance Co.			1	6,154.00				6,154.00	
Mortgage note of Amos Bieslan (non-interest)				5,000.00				5,000.00	
300 shares common stock of American Carso Co., par value $30,000	Kendall & Shuck	8–3–23	1	30,900.00	31,652.28		$752.28		
Dividend declared July 6, 1923			1	2,100.00	2,100.00				
Bonds of Gypsum Valley Co. par value $10,000	Kendall & Shuck	3–7–24	3	9,000.00	7,399.37	$1,600.63			
Accrued interest thereon			1	291.67	291.67				
Five passenger Washington touring car	Luella M. Fry	8–3–23	1	1,000.00	1,200.00		200.00		
Hendricks Coupe	John Speer	8–3–23	1	700.00				700.00	
Deferred interest on note to Second National Bank			1	349.68				349.68	
Pearl necklace	Melvin W. Merrill	3–7–24	3	5,650.00	3,000.00	2,650.00			
Deferred insurance on burglary policy No. 19,685, National Insurance Co.			3	42.22				42.22	
600 shares common stock of Templeton & Co., par value $60,000				78,000.00					78,000.00
Note of Raymond Wallace (non-interest)				1,134.28				1,134.28	
				$152,364.85	$51,273.39	$4,250.63	$952.28	$16,415.18	$81,377.93
ASSETS NOT IN INVENTORY									
Two shares common stock of The Hodges Co., par value $100				142.00					142.00
Savings account in High Street Bank			2	1,000.00	1,000.00				
Accrued interest thereon			2	11.67	11.67				
Note of Robert M. Olmstead (non-interest)				200.00					200.00
War Savings Stamps				121.56					121.56
				$153,840.08	$52,285.06	$4,250.63	$952.28	$16,415.18	$81,841.49

Form 2. Realization Account

zation account shows at a glance the assets which have and have not been disposed of, two things which the executor would otherwise have to search out frequently unless he checked a copy of the inventory as he disposed of assets, a method which would easily lead to errors because of lack of a reconciliation with general books.

The keeping of the realization account has the further advantage that the most difficult schedules of the final accounting are thereby prepared, whereas otherwise the information for those schedules would have to be separately secured at time of closing. The realization account is a schedule showing the amount realized on each of a list of assets; general books are a financial history.

Typical Transactions

ENTRIES BEFORE APPRAISAL.—Theoretically the inventory should be the first thing to appear on the books, but it will usually be necessary to enter various transactions before the appraisal is completed. Suppose for example that a dividend declared before the death is received on the day on which the administrator takes charge. It has been explained that Inventory account is to be debited with the appraised value of the corpus, and that it is to be credited with appraised value of each inventoried asset turned into cash, distributed, or otherwise disposed of. If the inventory had been completed, all would be simple in the matter of this dividend. The entry would be simply Cash/Inventory.

The inventory not yet having been entered, however, the same entry will be made, but it becomes incumbent upon the administrator to see that the figure which he has credited to Inventory account is the figure at which the dividend is later carried in the appraisal, as otherwise his Inventory account will not clear itself when he renders his account, and an adjustment will be required.

As soon as the administrator secures his letters testamentary he should present them at decedent's bank and secure possession of decedent's funds. The entry in this case is like the one described above, in that the asset has not yet been inventoried, and the same principles apply, the entry being Cash/Inventory.

The same principle would apply to other similar cases.

If a separate cash book, journal, and ledger are used, and such entries are necessary before appraisal, it is customary to leave the first line on the debit side of the cash book blank so that the amount of cash on hand at time of death may be entered as soon as it is determined by inventory.

INVENTORY TRANSACTIONS.—The entry setting up the inventory is Inventory/Estate Corpus. As has been said, care must be taken to see that the credit given to Inventory account at time of realizing upon each asset is the same as the amount with which Inventory account has been debited for that asset, i.e., its appraised value. If this is not done, the accounts will not close out properly to show the necessary clearance for the representative.

For this reason it is wise, when entering the inventory, to examine the credits which have previously been passed to Inventory account, to make sure that all such credits are at the figures at which the items are included in the inventory. Adjustments should be made for any discrepancies, crediting Gain on Realization with any increase in the amount received above the inventory value, or debiting Loss on Realization with any deficiency, or crediting Assets Not in Inventory if the item was entirely omitted.

If an automobile entered on the inventory as being worth $1,000 is sold for $1,200, the following entry is necessary:

Cash	$1,200	
Gain on Realization		$ 200
Inventory		1,000

The same principle must be followed in reference to any sale for other than the appraised value. If this automobile had been sold for $800 the entry would have been:

Cash	$800	
Loss on Realization	200	
Inventory		$1,000

Inventory account must be credited with the inventory value of each asset disposed of, as only in this way will Inventory account close out with the assets.

Assets which stand in the name of the decedent should be included in inventory, leaving it to the court to pass finally upon the title thereto. Suppose that in the inventory there were included certain certificates of stock found in decedent's desk, and assigned in blank by him, which were claimed by another person who was able to prove that he had bought and paid for them. The court would order the administrator to turn over the certificates to the purchaser, and it would be necessary for the representative to show the transfer by the entry Loss on Realization/Inventory.

A theft of inventoried articles not yet realized upon would be shown by the entry Loss on Realization/Inventory, made whenever the recovery seemed improbable.

All losses are subject to the same general principles. If in the case of a loss by fire of property appraised at $5,650, there was in effect a fire insurance policy of $3,000, the entry of the loss, made at the time of the receipt of the payment from the insurance company, would be:

Cash	$3,000	
Loss on Realization	2,650	
Inventory		$5,650

ASSETS NOT IN INVENTORY.—The first inventory rendered by the personal representative is seldom complete, even for small estates. This is often due to failure to understand what really constitutes the "corpus" of an estate, or it may occur because it is rarely possible at the beginning of an administration to discover all the property of decedent. Very often there are accruals of various sorts which are unknown to the executor until he begins to collect assets. Sometimes an entire bank deposit is unknown at time inventory is prepared.

Entry in case of after-discovered assets is always Cash/Assets Not in Inventory, for amount realized when they are sold. There will thus be no gain or loss on the realization of after-discovered assets except in cases of theft, fire, etc., because the valuations at which they are to be charged in are not entered until they are disposed of and the charging-out values determined. If any such asset is not sold, a fair market value should be assigned to it at time of closing books and recorded in an entry Inventory/Assets Not in Inventory. Debits to the Inventory account result only from the original inventory and from assets discovered thereafter and not sold.

After-discovered assets may be handled on the realization account in same manner as inventoried assets, and in fact are most advantageously handled by an extension of the same form (see end of Form 2). For after-discovered assets the amount shown in the 1st column is the amount realized upon a sale, if the asset is sold, or, in other cases, fair market value. Each such asset should be listed for memorandum purposes as soon as discovered, although the value will probably not be entered until later.

INCOME.—The entry for receipts of any kind of income is Cash/Income, but any receipts of income accrued prior to the demise constitute corpus and are entered Cash/Inventory if the accrual was inventoried, or Cash/Assets Not in Inventory if it was omitted. Frequently receipts of interest, etc., must be divided on the books between corpus and income. If such a receipt of $60 included $35 which had accrued prior to the demise and $25 earned afterwards, the entry would be:

Cash	$60	
Inventory		$35
Income		25

Suppose the representative discovers the existence in decedent's name of a savings account of $1,000, not included in inventory. The interest for the past 6 months, amounting to $20, must be divided between corpus and income as in case of other interest income, but since the interest accrued to the demise was not included in inventory, it, as well as the principal, must be credited to Assets Not in Inventory. The entry is, then:

Cash	$1,020.00	
Assets Not in Inventory		$1,011.67
Income		8.33

LOSSES OF INCOME.—If the proceeds of a collection of income had been placed by the representative in his safe overnight, together with his own funds, and had been stolen therefrom, it would be necessary for him to record the loss by the entry Loss on Income/Cash. As the stolen money belonged to income the loss should not fall upon general assets of estate, but should be charged against income. It would be improper for administrator to allow books to ignore both the receipt and the theft, because he is chargeable with all amounts he collects and these must appear on his books.

If the money stolen had been part of a net balance left after miscellaneous disbursements, some against corpus and some against income, had been made from miscellaneous receipts, it would have been necessary to add the total receipts from corpus and subtract the total disbursements for corpus, and to add the total receipts from income and subtract the total disbursements against income, thus ascertaining the balance of corpus and income cash on hand, and then to prorate the loss. Loss on Income would be charged with amount of income cash stolen, and Loss on Realization with amount of corpus cash, and the entry would have been:

Loss on Income	$........	
Loss on Realization	....	
Cash		$........

Suppose a bank in which decedent had a savings account of $3,000, plus $60 interest earned after demise, failed. The final settlement of the bank's affairs being made with a loss of $612 to the estate, the estate books must now show this loss thus:

Loss on Income	$ 12	
Loss on Realization	600	
Cash	2,448	
Savings Accounts		$3,060

The loss is proportioned between Loss on Income and Loss on Realization as indicated in connection with a loss by theft.

DEBTS OF DECEDENT.—Entry of payments of debts existing at time of demise depends on whether or not such debts are set up on the books in advance

of payment. Any checks issued by decedent prior to his death become void if not presented for payment before the bank on which they were drawn learns of the demise, and the amounts which they represent are thereafter to be considered debts of decedent.

EXPENSES AGAINST INCOME.—Just as interest receivable which had accrued before decedent's death is corpus and that accrued after the demise is income, so interest payable accrued before decedent's death is a charge against corpus (debited to Debts of Decedent) and that accrued after the demise is a charge against income (debited to Expense against Income). If a mortgage note for $1,000 is paid, together with $30 interest, $18.33 of which had accrued prior to the demise, charge against corpus would be:

Principal	$1,000.00
Interest to date of death	18.33
	$1,018.33

and the entry becomes:

Debts of Decedent	$1,018.33	
Expense against Income	11.67	
Cash		$1,030.00

DISTRIBUTION OF CASH AND OTHER ASSETS.—If the estate funds are sufficient and there seems to be no doubt of the estate's solvency, the administrator may be willing to pay to the heirs reasonable advances on the final distribution. These payments are entered as Distribution of Cash and Other Assets/Cash. The administrator must deduct state inheritance taxes from amounts which he distributes.

If one of the heirs, with proper consent, takes over at the appraised or other value **any assets other than cash,** receiving these in lieu of a regular distributive share, such transfer is considered a sale of the asset to the heir. In such cases it is always best, to make the record complete, to issue to the heir a check for the amount of the sale, if the administrator is willing not to require the heir to pay out his own money. The heir may then issue his own check or indorse the check just received, in either of which cases the administrator deposits the amount received.

If among the estate assets there is **real property** which passes directly to heirs-at-law, without coming into the hands of the administrator, this real estate not having been included in the inventory, the books of account need take no note of the transaction. But if such real estate was included in the inventory, it is necessary to credit it out of the Inventory account. The entry should be Distribution of Cash and Other Assets/Inventory.

PAYMENTS ON LEGACIES.—If under the same solvent conditions executor is willing to pay to the legatees **reasonable advances** on their legacies, the payments are shown by the entry Payments on General and Demonstrative Legacies/Cash.

Specific legacies are handled differently from others because the executor is not entitled to a commission on them. Entry for transfer of a specific legacy is Specific Legacies Distributed/Inventory. Specific legacies distributed are entered in the fifth column of the realization account.

If an **after-discovered asset** constitutes part of a specific legacy, as a block of Liberty Bonds when "all my Liberty Loan bonds" had been bequeathed to a nephew, the executor should appraise it properly and make the entry Specific Legacies Distributed/Assets Not in Inventory for the fair market value of the asset.

When **legacies not specific** are numerous or advances made thereon are likely to be many, it is often advisable to keep a **legatees ledger** in the general style of any subsidiary personal accounts ledger such as an accounts payable (purchase), or accounts receivable (sales or customers) ledger.

All **payments made on other than specific legacies** and charged to Payments on General and Demonstrative Legacies account should be posted to the legatees' accounts in this ledger. The total debits in this ledger will always equal the debit amount of Payments on General and Demonstrative Legacies account, and this ledger will be subsidiary to that account. Legatees are not credited until the books are closed, when Payments on General and Demonstrative Legacies account in the general ledger is credited with payments made. Even then if certain legacies or parts of legacies of this type have not been paid, the full amount of the legacy will not be credited to the legatees' accounts. The credit will be the amounts of payments only. For this reason the titles of the accounts in the legatees ledger should embrace memoranda of amounts of legacies.

INHERITANCE TAXES.—State inheritance taxes, whether paid by administrators or by executors, are to be deducted from the amount which would otherwise pass to each heir. A deposit of the estimated amount of such taxes may be required by the state in advance of distribution. If it is estimated that the tax will amount to $2,000, the representative will be required to deposit this amount, subject to correction when the true amount of tax shall have been determined.

The payment, or so much of it as is properly due the state, is an advance on a distribution of the assets. Even if a will provides that state inheritance taxes are to be paid by the estate, they are an advance on legacies, because if they are not collected from the individual legatees they are a deduction from the legacy to the remainderman. Whether such taxes should be charged (in an executorship) to Payments on General and Demonstrative Legacies, Payments of Principal to Trustee, or to Specific Legacies Distributed, cannot, however, be told at time of the initial estimated payment, as this cannot be divided among the legatees. Therefore this payment is best debited to Inheritance Tax Suspense until the true amount is ascertained.

When the exact tax has been determined, it is possible to divide the tax and charge it against the proper accounts, viz.:

For the administrator: Distribution of Cash and Other Assets/Inheritance Tax Suspense. The administrator must remember to apply the tax against the distributive shares of the heirs.

For the executor:

Payments on General and Demonstrative Legacies..	$........	
Inheritance Tax Suspense................		$........
For amounts which the executor will take as deductions from all except specific legacies.		
Payments of Principal to Trustee................	$........	
Inheritance Tax Suspense................		$........
For amount of tax on estimated residue which will be given to the trustee, if any.		

The balance remaining in Inheritance Tax Suspense account is amount due the executor from recipients of specific legacies. Such collections are entered as Cash/Inheritance Tax Suspense. By these entries Inheritance Tax Suspense account is cleared.

No part of the tax is chargeable to Payments of Income to Trustee because only property existing at time of death is taxed.

The **federal transfer tax** is an administration expense, but it is not an expense deductible in determining amount of the tax. There is one exception to the rule that the tax is considered an expense against corpus of the estate as a whole. If there are life insurance policies in excess of $40,000, there is charged to the beneficiaries under these policies that proportion of the total tax which "the proceeds, in excess of $40,000, of such policies bear to the net estate."[5] In this case the entry would be:

Administration Expense (for the amount to be borne by the estate)	$........	
Distribution of Cash and Other Assets (for the amount to be passed to the beneficiaries)	....	
Cash		$........

OPERATION AND SALE OF A GOING BUSINESS.—If decedent was the individual proprietor of a going business, complications are introduced for the handling of which no uniform rule can be laid down. Of course, the assets of the business must be inventoried with the general assets of the estate, but it is always wise to make of them a distinct class in the inventory. If the court instructs the administrator to continue the operation of the business and a good set of books has been kept for this enterprise, these books should be closed in the manner which has been followed in the past, bringing down the asset and liability balances, and entering the appraisal as an adjustment to the investment.

At this point the administrator has a **choice of two courses**: he may elect to continue the keeping of the books of the business as distinct from the general estate books, or he may carry the whole through one set of books. If the business is of some magnitude and has an accounting staff which is able and used to handling the transactions which occur, the former procedure is probably the more satisfactory, as there will be innumerable details which the administrator will not want to deal with and indeed probably could not handle so well as could those to whom the handling of these details has become a routine matter.

If the administrator follows this course he must, of course, provide a **suitable check** upon the work of those who handle the records. It will usually be necessary for him to tighten up on the methods generally followed in accounting for individual proprietorships. He should require that all receipts be banked, no bills being paid directly out of the receipts. If small payments are necessary they should be made from an "imprest" petty cash fund and properly vouchered.

While for the books of the business any good commercial system of accounting will do, complications arise in connecting these up with the books of the estate. Perhaps the most satisfactory tie is secured by opening on the estate books an account with the business by making the entry Business/Inventory for the appraised value of the assets of the business. All cash withdrawn from the business would be entered as Cash/Business. The payment of debts of the business existing at decedent's death would be entered as usual: Debts of Decedent/Cash, and the expenses of operating the business after the demise would be shown by the entry, Business/Cash.

Whenever it is desired to make an accounting, it will be necessary to reinventory the assets of the business. If possible, all bills incurred for the business should be paid and an entry then made to bring the balance in the account

[5] Revenue Act of 1921, Sec. 408.

with the business to the amount of the new inventory. If the account with Business showed a debit of $22,000 and a credit of $6,000, the new inventory of the business being $14,000, the entry would be determined as follows:

$22,000	debit balance
− 6,000	credit balance
$ 16,000	net debit balance
− 14,000	true value
$ 2,000	loss

and the entry would be:

Loss on Realization	$2,000	
Business:		$2,000

This entry would bring the net debit balance of Business account down to the true inventory of $14,000 and would show the loss from operation.

If on the other hand the new inventory showed $18,000 the entry would be determined as follows:

	$ 22,000	debit balance
	− 6,000	credit balance
	$ 16,000	net debit balance
from	18,000	true value
	$ 2,000	

The entry would be:

Business	$2,000	
Gain on Realization		$2,000

If the business had yielded a large amount of cash the books might show:

$ 40,000	credit balance
− 16,000	debit balance
$24,000	net credit balance

To this there would have to be added the new inventory to obtain amount of gain.

If the books of the business are closed at the same time and on the same basis, a like amount of loss or gain should appear therein and be analyzed in the detailed operating statement of the business.

ACCOUNTING FOR PARTNERSHIP INTERESTS.—A partnership is dissolved by law upon the death of a partner, the assets of the partnership passing to the surviving partner or partners, subject to an obligation to dispose of them in winding up the business and to account to the estate of the deceased partner for his share in the partnership property, including the good-will. The administrator is charged with the duty of seeing that the partnership property is wound up and that the surviving partner or partners render to him a proper accounting, but it is unnecessary for him to record in his books anything having to do with the realization except what he receives as the decedent's share.

The interest of the deceased in the partnership venture is, of course, an asset belonging to the corpus of the estate. It should be appraised with the other assets, in which case any amounts the administrator receives as representing

the realization of the decedent's share should be credited to inventory up to the appraised value of the decedent's interest and after that to Gain on Realization, as the entire amount received is considered a part of the corpus although it may consist in part of profits earned by the surviving partners in the process of liquidating the business. If the amount finally realized is less than the inventory value, the difference should be closed out by the entry Loss on Realization/Inventory.

The law of many states permits the inventorying of a partnership interest without a stated value. If this is done, all that is realized from the interest is credited to Gain on Realization.

Closing the Books and Preparing the Account

PREPARING TO CLOSE THE BOOKS.—When the representative has realized, as far as he can, on all the assets of the estate, and has paid all just claims, he is ready to wind up his transactions before closing his books and rendering his final accounting. He must first reduce to present value any deferred expenses still included in his Inventory account. If insurance, for example, has been prepaid by decedent for several years and had been included in the inventory, the representative must now make the entry Expense against Income/Inventory for the amount of prepayment which has expired since the demise. In other words, he must reduce the book value of the asset to its present worth.

If he has discovered any uninventoried assets which he has not sold or distributed, he should now make the entry Inventory/Assets Not in Inventory for their fair market value.

THE TRIAL BALANCE AND RECONCILIATIONS.—The trial balance used below for purposes of illustrating the accounting has been drawn from the work of an executor, because of the additional complications usually existing therein, but the same general treatment is followed in the work of an administrator.

Trial Balance

Cash in Banks	$ 21,639.76	
Inventory	81,841.49	
Assets Not in Inventory		$ 1,475.23
Gain on Realization		952.28
Loss on Realization	4,250.63	
Funeral and Administration Expenses	5,090.52	
Debts of Decedent	15,758.04	
General and Demonstrative Legacies Distributed	6,000.00	
Specific Legacies Distributed	16,023.28	
Payments of Principal to Trustee	7,239.05	
Estate Corpus		152,364.85
Income		10,132.69
Loss on Income	750.00	
Expense against Income	2,332.28	
Payments of Income to Trustee	4,000.00	
Totals	$164,925.05	$164,925.05

Summary of Account

FIRST, AS TO CORPUS:

I charge myself with:

Inventory, per Schedule A	$152,364.85	
Assets Not in Inventory, per Schedule A	1,475.23	
Gain on Realization, per Schedule A	952.28	
Total Charges		$154,792.36

I credit myself with:

Loss on Realization, per Schedule A	$ 4,250.63	
Specific Legacies Distributed, per Schedule A	16,023.28	
Inventory Not Realized Upon, per Schedule A	81,841.49	
Funeral and Administration Expenses, per Schedule B	5,090.52	
Debts of Decedent, per Schedule C	15,758.04	
Payment of General and Demonstrative Legacies, per Schedule D	6,000.00	
Payments of Principal to Trustee, per Schedule E	7,239.05	
Total Credits		$136,203.01
Leaving a balance of cash of		$ 18,589.35
Inventory Not Realized Upon, per Schedule A		81,841.49
Total Balance of Corpus		$100,430.84

SECOND, AS TO INCOME:

I charge myself with:

Income Realized, per Schedule G		$ 10,132.69

I credit myself with:

Expense Against Income, per Schedule H	$ 2,332.28	
Loss on Income, per Schedule I	750.00	
Payments of Income to Trustee, per Schedule J	4,000.00	
Total Credits		7,082.28
Balance of Income Cash		$ 3,050.41
Leaving a balance of		$103,481.25

to be distributed to those entitled thereto, subject to the deductions of the amount of ....commissions and the expenses of this accounting. The said schedules, which are severally signed by........are part of this account.

FORM 3. Summary of Account

At this point it is necessary to balance the subsidiary records. The total of General and Demonstrative Legacies Distributed account must equal the total of payments charged to legatees on the legatees ledger. This amount must also equal the sum of all the general and demonstrative legacies except those to the trustee, unless some legacies have not been paid, in which case the difference will be the amount of those which have not been paid.

The debit balance of Inventory account must equal the appraised value of all the assets which are still unrealized upon (including any after-discovered assets not sold or distributed), as shown in the realization account, and the realization account must itself balance. Bank accounts should be reconciled with statements furnished by the banks.

FINAL ACCOUNTING.—There appears above (Form 3) the summary of account from the final accounting of the estate whose before-closing trial balance was shown above. The legal statement which precedes this, which is not of accounting interest, and the supporting schedules, which are merely a matter of detail not presenting any problems, are not given here.

This summary and the schedules and closing entries may all be prepared at the same time, in the manner described below.

DEBITS ON ACCOUNT OF CORPUS.—In starting the corpus statement the 6-column schedule (p. 1069), called the realization account, may be put to excellent use. The total of the 1st column, down to the end of the appraisal as filed, is the amount of that appraisal and is entered as the 1st item in the summary.

The after-discovered assets are shown in the remainder of the 1st column, the total of which becomes the 2nd item in the summary. When this amount is recorded, the Assets Not in Inventory account, which will show the same total, may be closed out by the first of the closing entries:

Assets Not in Inventory	$1,475.23	
Estate Corpus		$1,475.23

The 4th column of the realization account represents the other debit to the executor, and when its total is entered as the gain on realization of appraised value, the gain on realization account is closed out:

Gain on Realization	$952.28	
Estate Corpus		$952.28

The total charges to the executor on account of corpus are then the sum of the credits in the Estate Corpus account.

CREDITS FROM THE REALIZATION ACCOUNT.—Three of the credits in our summary of the corpus are also taken from the realization account. From the 3rd column we obtain the amount of loss on realization of appraised value, and having entered it we may close the Loss on Realization account by the entry:

Estate Corpus	$4,250.63	
Loss on Realization		$4,250.63

The next item in the summary is the appraised value of the specific legacies which have been distributed. Its amount is shown by the 5th column of the realization account and by the Specific Legacies Distributed account on the synoptic or general ledger. When this total has been entered on the summary, the ledger account may be closed by the entry:

Estate Corpus	$16,023.28	
Specific Legacies Distributed		$16,023.28

The summary next shows the undisposed-of balance of the inventory, including any after-discovered assets not sold. This figure is the total of the 6th column of the realization account and is the balance in the Inventory account on the synoptic. The Inventory account, which is a balance sheet item, is not closed out.

SCHEDULE A, REALIZATION OF ASSETS.—To prepare Schedule A, simply have a copy of the realization account made with the proper heading, "Schedule A, Realization of Assets." This should be prepared on a sheet so arranged that there is to the right of the figures a space sufficiently wide to enter the various explanations called for, such as manner of sale, reasons why various assets have not been sold and debts not collected, and details as to loss by accident such as theft, fire, etc.

By keeping the realization account during the progress of administration we have avoided at the time of winding up the estate the tedious work of digging out the information needed, and have so arranged our work that the most important of our schedules is prepared for us in the very keeping of our books. In fact, it may be said that the first five of our schedules are prepared for us by our method of keeping our accounts, for under other plans separate schedules are required for each of the five items combined in our Schedule A.

OTHER CORPUS CREDITS.—The other corpus items for which the executor takes credit in the account are shown in the schedules listed below:

Schedule B, Funeral and Administration Expenses
Schedule C, Debts of Decedent
Schedule D, Payments on Legacies
Schedule E, Payments of Principal to Trustee

These schedules are easily prepared from the entries, being, in fact, merely copies of the accounts with the necessary explanatory matter. The form in which they are written is largely a matter of personal preference.

These accounts should then be closed on the books by the following entries:

Estate Corpus..............................	$ 5,090.52	
Funeral and Administration Expenses....		$ 5,090.52
Estate Corpus..............................	$15,758.04	
Debts of Decedent......................		$15,758.04
Estate Corpus..............................	$ 6,000.00	
General and Demonstrative Legacies.....		$ 6,000.00
Estate Corpus..............................	$ 7,239.05	
Payment of Principal to Trustee.........		$ 7,239.05

For the closing, four journal entries are preferred to a compound entry because the result of the separate entries is that the Estate Corpus account now contains the summary of the executor's account in so far as corpus is concerned. The credit in the Corpus account after these entries have been made is the value of the inventory and corpus cash on hand.

The manner of closing the summary as to corpus is self-explanatory on the summary of account.

INCOME SUMMARY.—The debit against the executor on account of income is the amount of the credit to Income account. The items making up this amount are copied with the necessary explanations in Schedule G.

The credits which the executor takes are listed in:

Schedule H, Expense against Income
Schedule I, Loss on Income
Schedule J, Payments of Income to Trustee

These schedules are virtually transcripts of those accounts, which on the books are then closed by the following entries:

Income	$2,332.28	
Expense against Income		$2,332.28
Income	$ 750.00	
Loss on Income		$ 750.00
Income	$4,000.00	
Payments of Income to Trustee		$4,000.00

The Income account on the books will then show the amount of cash belonging to income in the hands of the executor, which amount should also be the difference between the income with which the executor has charged himself on the summary and the charges against income with which he has credited himself.

DECREE OF DISTRIBUTION.—When the accounting has been presented and approved, the court makes an allowance to the personal representative for the expense of rendering the account and sets the commission of the representative. Interest may be allowed on certain legacies, after which the balance of the estate is ordered distributed as specified in the decree.

Before the closing of the books the expenses of the accounting would have been considered an administration expense, but since there are so few entries to be made at this stage, the nominal accounts are not reopened. Since the payment is a charge against the corpus, the entry is Estate Corpus/Cash.

The representative's commission must be prorated between corpus and income in the ratios that the amounts on which the receiving and distributing commissions on account of principal and income are computed bear to the total of both; but in the computing of commissions, corpus and income must be considered together, because in the states in which the commission is payable on a sliding scale, the first amounts being at higher rates, the computation of the commissions would otherwise be excessive.

For the same reason that no corpus expense accounts were reopened, Expense against Income account is not reopened, and the entry is made as a debit direct to Corpus and to Income:

Estate Corpus	$........	
Income	....	
Cash		$........

Interest on legacies is a proper charge against income because the income has been increased by the executor's retention of cash. The entry is Income/Cash.

The final entry showing the distribution of the remainder of the assets of the estate is made as follows, the amounts being the balances in each account:

Income	$........	
Estate Corpus	....	
Cash		$........
Inventory		....

There is now no balance in any account and the books should be ruled off as finally closed.

Trusteeship Accounting

DUTIES OF TESTAMENTARY TRUSTEE.—The trustee takes over the corpus of the estate from the executor. During trusteeship this corpus is called

the **principal**. The same general principles apply to the division of trust funds between principal and income as have been set out in connection with the work of the administrator and executor. The problems of classification are not nearly so frequent or so difficult in the case of the trustee.

The **duties of the trustee** are less varied than those of the executor. The functions of the executor include the realization of the cash value of the assets and the payment of debts owed by the decedent as well as the care of the assets and the distribution of the legacies; but the trustee's duties are in general only the care of assets and the division of income.

The first duty of a **testamentary trustee**, on taking over the assets of an estate, is to examine the executor's decree of distribution and the accounts of the executor sufficiently to satisfy himself that he is receiving all of the assets to which he is entitled. Immediately thereafter he should have transferred to his name as trustee all the assets. If there are two or more trustees the transfers should be to the names of all.

ACCOUNTS NEEDED BY TRUSTEES.—When the books of the executor are closed the assets are included in the two accounts of Cash and Inventory. These are offset by the two net worth accounts of Income and Corpus, the amount of income cash being represented by the balance of the Income account and the sum of the corpus cash and other corpus assets by the balance of the Estate Corpus account. These four accounts are all which are ordinarily necessary for the trustee, as—except in the cases of large estates with much rental property—the accounts are generally kept without the use of analytical income and expense accounts.

It is necessary for the trustee to **account separately** for each of the various trusts for which he acts. This does not mean for the various estates alone, as in one estate there may be several trusts. A will may provide for any number of different trusts; therefore, these four accounts (Cash, Inventory, Principal, and Income) must be maintained for each trust.

The place which **banks and trust companies** are properly taking in acting as fiduciaries presents an accounting need which, due to the number of trusts involved, requires an elaboration on the above simple system. Because of the great number of assets of each kind handled, the handling of the asset accounts is simplified if they are somewhat broken up. The ordinary subdivisions are Cash, Notes and Mortgages, Stocks and Bonds, Real Estate, and other assets. The need for a division of labor and an adequate watch over the keeping of records requires the opening of **controlling accounts** carrying summaries of the transactions having to do with all trusts; but whatever additional safeguards are needed for the efficient handling of a large number of trusts at the same time can be readily placed upon the type of foundation suggested above, because the principles and the legal requirements remain the same.[6]

EXAMPLES OF TRUSTEE'S ACCOUNTS.—The most satisfactory way of keeping the accounts of a trustee has been found to be by the use of a synoptic, showing only the four accounts essential for the trustee, namely, Cash, Investments, Principal, and Income, with a debit and a credit column for each.

Assume that a trust fund of $100,000 has been created, the income therefrom (but not to exceed $5,000 thereof annually) to be paid to donor's sister during her life. After her death the principal is to be paid as directed by her will. This is only one of a number of trusts created by the will. The trial balance of the books of the executor of this estate after distribution was as follows:

[6] For a more complete discussion of accounting for the estates of decedents the reader is referred to Conyngton, Knapp, and Pinkerton: Wills, Estates, and Trusts.

Account	Debit	Credit
Cash	$ 17,000	
Inventory	563,000	
Estate Corpus		$579,800
Income		200
	$580,000	$580,000

Specific assets or specific sums of money have been set aside by the executor to form the trust funds. Before making his opening entries the trustee must know what assets are set aside for the various trusts. With this information, he opens his record of this trust with the entry:

Cash	$ 3,000	
Investments	97,000	
Principal		$100,000

INVESTMENT OF CASH.—When the trustee invests any part of the balance of cash which is lying idle, whether this cash is a part of the corpus turned over to him by the executor or has come into his hands as a result of the sale of assets, or whether it is income which has been collected by him and is not to be immediately distributed, it is necessary for him to make the entry, Investments/Cash.

SALE OF ASSETS.—Suppose the trustee, for certain reasons and with approval of the court, decides to sell some of the securities which have been set aside for the trust. Gains and losses on such sales are not income or a charge against income. (Income from the standpoint of the division of funds between a tenant and a remainderman is not necessarily the same as income from the standpoint of the existing income tax law.)

In case of inventoried assets it is not a certain amount of money which makes up the principal, but the assets themselves for whatever they are worth. In case of assets purchased by the trustee and later resold by him, the increment or loss is an increase or decrease in the principal of the trust rather than an item of income or a reduction of income. Any unusual or extraneous gain or loss, other than the usual yearly income and charges against that income, falls to the principal of the fund.

The assets sold must be credited to Investments account at the valuation at which they entered this account, which will be the valuation at which they were carried in the original inventory of the estate if they were included in that inventory, or the cost, if they were purchased after the decedent's death. The effect of this entry is to make the books show that the investments of this fund have been reduced in amount by that valuation, no matter what the selling price.

If the securities were sold at a profit, the entry is:

Cash (the amount received)	$.....	
Investments (the inventory value or the cost)		$.......
Principal (the profit)		....

If a loss resulted from the sale the entry is:

Cash (the amount received)	$......	
Principal (the loss)	......	
Investments (the inventory value or the cost)		....

BETTERMENTS, REPAIRS, AND REPLACEMENTS.—Expenditures for repairs necessary to maintain property in its previous condition are chargeable to income, but repairs and additions which increase the usefulness or value of

property are charged to principal. This rule is not always easy to apply, but it has been interpreted as meaning that "where repairs improve the property to the extent of their cost, they are chargeable to principal."[7] In other words, any cost which actually adds to value—which is for a real improvement or addition rather than for merely a repair or a replacement—is a proper charge against principal.

PAYING OFF ENCUMBRANCES.—Some of the property turned over to the trustee may have been pledged or mortgaged and it may eventually devolve upon the trustee to discharge this debt. Such a payment is a charge against principal, but all interest on the mortgage is chargeable to income.

If the trustee is required to discharge an involuntary encumbrance, such as an assessment for street improvements, the cost is divided between income and principal. Sometimes the entire amount is charged to Investments at time of payment, and Income is charged with interest thereon annually thereafter. Sometimes the interest is funded and charged to Income in a lump, the present value of the annual payment for the number of years the trust is likely to exist (based on the American Mortality Tables) being determined. The justice of the charge against income rests on the theory that since the income-earning capacity of the investment is increased (theoretically, at least) by the improvement, the recipient of the income should pay a part of the cost.

RECEIPTS AND DISBURSEMENTS OF INCOME.—When income is received from interest, dividends, rents, etc., the entry is Cash/Income.

Payments of income to tenants under the will are entered as Income/Cash.

The provision of the will under which the life-tenant receives income from the trust fund of $100,000, "said payments of income not to exceed $5,000 per annum," creates an indefinite annuity. Income from this fund is, of course, credited to Income account, and payments to the life-tenant, limited to $5,000 annually, are charged to that account.

If the will directs that the excess income over $5,000 is to be transferred to the principal of the trust, it is necessary at the close of each year to record this transfer on the books by the entry, Income/Principal. If the excess were to be transferred to the principal of some other trust, the entry on the books of the first would be Income/Cash, and that on the books of the trust receiving the increase would be Cash/Principal.

If the will had directed that the excess income over $5,000 be disposed of by payment to someone else, such payments also would be entered as Income/Cash.

If the will had not provided for the transfer of the excess over $5,000, but if the excess were to have been simply retained in Income, to make up the shortage in any year in which the earnings were less than $5,000, and were eventually to pass with the principal to the life-tenant's grantees, no entry would have been necessary. The balance not distributed would have been accumulated in the Income account. Any purchases of securities or other assets with the money thus made available would be shown as Investments/Cash, an entry which does not affect Income account but simply shows the exchange of an asset of cash for an asset of investments. The Income account would still show the amount of income which had been earned and had not been distributed

EXPENSES.—The payment of any expenses which are proper charges against income may be entered as Income/Cash. Any disbursements which are charges against the principal of the estate are in the same way entered as Principal/Cash.

Taxes are chargeable against income, with the exception that in some states

[7] Loring, A Trustee's Hand Book, 3rd ed.

taxes assessed on vacant land are charged against principal. Insurance premiums are generally chargeable against income by the terms of the trust instrument, and this practice is usually followed where there are no definite provisions. But recoveries on account of fire losses are principal. In case of partial loss they are generally used to meet expense of repairs. If there is a total loss, the fund is invested either in rebuilding or in some other proper manner.

The **trustee's commission** is usually a percentage of gross income collected and is charged against income. Additional allowances where extra work is necessary, as for sale of real estate, are charged to principal when such services are primarily beneficial to the fund, or they may be apportioned equitably. A broker's commission for purchase or sale of real estate is considered part of the purchase price or a deduction from the sale price, and is consequently a charge against principal.

The same reasoning would seem to apply to the purchase of stocks and bonds, [but] broker's commissions on change of investments, where it was expressly provided that all expenses were to be charged to income, were properly classed as expenses and charged to income.[8]

INTEREST ON BANK ACCOUNTS.—Trustees frequently have in certain funds balances of cash too small for ordinary investment but not likely to be needed for some time. As it is considered necessary for this cash to produce income, the general practice is to deposit it in a savings bank. Such a deposit should not be treated as an investment but should be carried as cash.

Interest credited on such savings should be recorded on the books, like other income, by the entry Cash/Income. If such income is on funds belonging to different trusts, it must be prorated between the trusts. Interest received on the average daily balance in a checking account common to all the trusts must be prorated on the basis of the average daily balance in each.

TRUST FUND PASSING BY WILL.—Under the provisions of the will the principal of this trust is to be paid over as directed by the beneficiary's will. At that time it will be necessary for the trustee to deliver to the executor of the beneficiary's estate the amount of cash and other assets comprising this trust fund and to make the following entry:

Principal	$........	
Income	....	
Cash		$........
Investments		....

If the will creating the trust had specified any other distribution of the principal, the same entry would have been made at time of the distribution. There is then no balance in any account.

AMORTIZATION OF BOND PREMIUM AND DISCOUNT.—Statutes of the different states vary in regard to the propriety of amortization, and are not always consistent in applying the same principles to bond premium and bond discount, but these statutes must be followed in each case.[9]

When bond discount is amortized, as when government bonds, yielding a low rate, are bought below par, the average return being raised on account of the low cost, the entry at the time interest is received is:

Cash (the amount received)	$........	
Principal (the amount of amortization)	....	
Income (the amount of income to be allowed)		$..

8 Loring, A Trustee's Hand Book, 3rd Ed.
9 For discussion of methods of amortization see section on "Mathematics and Formulas."

When premium on a bond is being amortized, the book entry of each receipt of bond interest is:

Cash (the amount received)....................	$........	
Income (the amount of income to be allowed).		$........
Principal (the amount of amortization).....		....

TRUSTEE'S REPORTS.—The **periodical reports** made by a trustee to the court are in two parts. The first has to do with principal; the second with income These are preceded by a summary of the condition of the estate as a whole. The **supporting schedules** making up the larger part of the report analyze this summary in its relation to principal and income of each individual trust.

At either the beginning or the end of the report should appear the **certificate of the trustee** as to the correctness of the report. Practice in the various states differs as to the form of this certificate, and at least the first one submitted by the trustee should be prepared with the assistance of his attorney.

The **form to be followed in the schedules** is specifically provided for in a few states, but the statutes of all mention the things to be shown. The court will have the report audited, and expense to the estate is saved if the schedules are clear and if they reconcile properly among themselves and with the books. Below are presented the principles generally followed and specimen schedules suitable in most states.

VALUATIONS USED.—All assets of the estate must be carried in the reports at book values. These are, in case of assets which were included in the original inventory of the estate, the valuations at which they were appraised for that inventory; in the case of assets purchased since the preparation of that inventory, the cost to the estate.

For the information of the court, many states require that the report of the trustee give also the market value or "bid" price on the day as of which the report is prepared. This means the day on which the trustee closed his books, the last day the transactions of which are included in the report. As it will probably take the trustee some time to prepare his report, it will usually not be actually filed until later. Under no conditions, however, should the books be changed to agree with the market value at any time during the trusteeship. If the asset becomes absolutely worthless it may, if desired, be written off by the entry, Principal/Investments; but if this is done the asset must continue to be carried in the reports and accounted for as of no value.

SCHEDULES.—The **first schedule** accompanying trustee's reports usually shows the assets of the estate at the date of the report.

The **headings** which it is necessary to show are Cash and Investments. Under Cash should be detailed the various depositaries with the amounts in the possession of each.

The general heading, Investments, should be split up into the necessary subclassifications. Those most common are: Real Estate, Mortgages, Notes Receivable, Stocks (or "Shares" as they are called in some jurisdictions), and Bonds. Others are: Accounts Receivable, Unsecured, Jewelry, etc. Each asset should be so described as to distinguish it absolutely.

The **second schedule** lists the sales of assets from the trust since date of last report. All information having to do with the sales should be shown, including date of court order authorizing the sale, a list of items sold, gross proceeds of each sale, expense of the sale, and difference between these two amounts or the net proceeds. The value at which the asset now sold has been carried on the books should also be given, and the schedule should be summarized by show-

ing the difference between the net proceeds of the sales and the book value of the assets sold. This difference is the net increase or decrease in principal on account of sales during year.

If there have been no sales during the year the schedule should be headed up, but instead of a list the words "No sales during year," should be inserted.

The **schedules of purchases of assets** for principal of each trust require usually only date of authorizing order, list of items purchased, their cost, and expense of purchase, the sum of which makes up the gross amount paid. If no purchases have been made during the year the schedules should be shown, but the words, "No purchases during year," take the place of the usual list.

Assignees, Guardians, and Receivers

ACCOUNTING ON CASH BASIS.—Accounting for assignees, guardians, and receivers, since these officers are required to report to courts which still follow the ancient practice of dealing almost entirely in terms of cash, follows the general lines set forth for the estates of decedents. The keeping of really adequate records for receivers, who usually operate going businesses for a time at least, is complicated by the desirability of maintaining accrual records to show the true results, along with the cash records required by the courts.

RECEIVERSHIP ACCOUNTING.—Receivers of corporations must not overlook the fact that the reports required of them by the federal income tax laws are corporation reports, and must follow the lines previously established by the corporation. These returns, for their proper preparation, require the keeping of a full set of corporation records during the period of operation of the business. Many receivers have found themselves with a great deal of extra work on their hands because state courts had instructed them that records of cash receipts were all that would be necessary, whereas full analyses later were found to be required by the Internal Revenue Department.

SECTION 22

CONSOLIDATIONS

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SECTION 22

CONSOLIDATIONS

HISTORICAL.—Following the depression of 1873, corporations became a popular form of business organization in the United States. None of the present well-known combinations then existed and to eliminate competition various arrangements were entered into. The **pool** was most common. Those entering into a pool usually agreed to sell their output through some central organization, the object being to secure stabilization of output and prices. The only power of enforcement lay in the good faith of the members in addition to certain penalties. Consequently, it often became profitable for members to break their agreements.

Next came the **trust.** Voting stocks of affiliated companies were placed under control of a board of trustees which issued receipts therefor, known as trust certificates. The trust was abandoned for the **holding company** when the legal test of restraint of trade became decisive.

The holding company was first made a practical possibility through the enactment by the New Jersey legislature of a revised general corporation act, under the provisions of which one corporation was granted the right to purchase and hold stocks of other corporations. Previously, this privilege had been granted only by special legislative act.

Status Under Federal Revenue Laws

WHEN CONSOLIDATED STATEMENTS DESIRABLE.—When securities are held for other purposes than control, it is not ordinarily necessary or desirable to show accounts in consolidated form. But when control of one or more corporations by another is exercised through intercompany stockholdings, concerns thus related are unified. It is desirable to express the full meaning of such unification.

Thus, if Company A owns 90% of outstanding common stock of Company B, it controls it and determines its policies. If it is engaged in same or a related industry, it buys from and sells to Company B, possibly advancing cash to Company B at times. If Company A sells goods to Company B at an apparent profit of $500, and the two companies are considered as a unit, no true profit is made. Inventory values are marked up by transferring merchandise between affiliated concerns. Such inflated values require adjusting to show the true status. Intercompany balances on current account offset each other. When accounts of holding companies are not consolidated with the accounts of their subsidiaries the holding companies may take into their income accounts dividends from subsidiaries which make a profit, but omit losses of other subsidiaries.

Federal taxation of corporate incomes is a factor. The United States

Revenue Act of 1917 contained no provisions concerning consolidated accounts. The American Institute of Accountants submitted a brief urging adoption of consolidated returns. It stated two possible bases, viz., (a) that intercorporate relationships must be on a strictly commercial basis, which would be troublesome both to taxpayer and government, or (b) that combined operations must be treated as one whole. It urged adoption of the latter course as the only one revealing the true situation. Following this the Treasury Department issued regulations providing that whenever necessary more equitably to determine invested capital or taxable income, the Commissioner of Internal Revenue **may** require corporations classified as affiliated under Art. 77 to furnish a consolidated return of net income and invested capital.

A Treasury decision was subsequently issued under which affiliated corporations, as limited and defined in paragraphs C and D of the regulations, were directed to make consolidated returns for the purpose of excess profits tax.

Concerning what companies were to submit consolidated statements the regulation provided: Two or more corporations are not "affiliated" merely because all or substantially all of stock therein is owned by same corporation, individual, or partnership; they must also be engaged in same or a closely related business.

The **Revenue Act of 1918** made specific provision for consolidated returns, stating that "corporations which are affiliated within the meaning of this section shall, under regulations to be prescribed by the Commissioner . . . make a consolidated return of net income and invested capital." The act provided that two or more domestic corporations were to be deemed affiliated:

1. If one corporation owns directly or controls through closely affiliated interest or by a nominee or nominees substantially all the stock of the other or others, or,
2. If substantially all the stock of two or more corporations is owned or controlled by the same interests. (See Art. 633 of Reg. 45.)

The 1918 act thus required consolidated returns where all or substantially all of the voting stock is held **without regard to the similarity or dissimilarity of the businesses.**

Under the Revenue Act of 1918 it was necessary to submit consolidated returns, both to ascertain net income and to ascertain invested capital, latter being required to determine excess profits tax. The Treasury Department ruled that: "Consolidated invested capital must be computed as of the beginning of the taxable year of the parent or principal reporting company and consolidated income must be computed on the basis of its taxable year." (See Art. 638 of Reg. 45.) Thus the consolidated balance sheet submitted to the Treasury Department for the purpose of determining invested capital was to be dated as of the beginning of the taxable year, while the consolidated statement of income was for the taxable year.

As the **Revenue Act of 1921** levied an excess profits tax for the calendar year 1921 only, the consolidated statement for purposes of determining invested capital is no longer of current interest so far as taxation is concerned. However, Sec. 240 of this law provides that corporations affiliated within the meaning of that section may make either separate returns or, under proper regulations, consolidated returns. Whichever plan is chosen must thereafter be followed, unless permission to change is granted by the Com-

missioner. The conditions under which corporations are deemed affiliated under this act are the same as those given above for the 1918 act. If affiliated corporations choose to submit consolidated returns, the law (Sec. 240-b) provides that: "The total tax shall be computed in the first instance as a unit and shall then be assessed upon the respective affiliated corporations in such proportions as may be agreed upon among them, or, in the absence of any such agreement, then on the basis of the net income properly assignable to each."

WHEN CORPORATIONS ARE AFFILIATED.—No fixed rule can be prescribed. The general rules provided by the acts of 1918 and 1921 are given above. The Treasury does not interpret the words "substantially all the stock" as meaning any given percentage, but says that it must be construed according to the facts of the particular case. The Treasury regards the ownership or control of 95% or more of the outstanding voting capital stock (not including stock in the treasury) at the beginning of and during the taxable year, as constituting an affiliation within the meaning of the act of 1921. When stock ownership or control is less than 95%, but in excess of 70%, the Treasury requires a full disclosure of affiliations, including stock owned or controlled in each subsidiary or affiliated corporation and percentage of such stock owned or controlled to total stock outstanding. Such statements should preferably be made in advance of filing the return, but if a consolidated statement is filed subject to the Commissioner's approval, the required statement should be filed as a part of the return. The words "the same interests" mean the same individual, partnership, or corporation, or the same individuals, partnerships, or corporations; but if stock of two or more corporations is owned or controlled by two or more individuals, or by two or more corporations, the corporations will not be held to be affiliated unless the percentage of stock of such corporations held by each individual, each partnership, or each corporation is substantially the same in each of the corporations.

CHANGE IN OWNERSHIP DURING TAXABLE YEAR.—If corporations are affiliated at beginning of a taxable year but such control or ownership is ended during the year, due to change of ownership, or if corporations are not affiliated at beginning of the taxable year but become affiliated during the year through change of stock ownership or control, a full disclosure of such changes of stock ownership must be made to the Commissioner. In the first case the parent company should ordinarily exclude from its return income and invested capital of controlled company from date of change of stock ownership. In the second case parent company should include in its return income and invested capital of controlled company from date of change of stock ownership. The controlled company whose status is changed should make a separate return for that part of the taxable year during which it was not in the affiliated group. If the change of status is for so short a period as to be negligible, a consolidated return or separate returns, as the case requires, may be made. A complete statement setting forth the facts should accompany such return or returns.

NET INCOME OF AFFILIATED CORPORATIONS.—The consolidated taxable net income of affiliated corporations is the combined net income of the consolidated corporations, subject to such provisions as cover the determination of taxable net income of separate companies, and subject to the elimination of intercompany transactions. If the net income of the group as thus determined does not exceed $25,000, only one specific credit

of $2,000 is allowed. If the consolidated net income is more than $25,000, the tax imposed by Sec. 230 of the 1921 law shall not exceed the tax which would be payable if the $2,000 were allowed, plus the net income in excess of $25,000. (See Art. 636, Reg. 62.)

FORM OF CONSOLIDATED RETURN.—Consolidated returns should be filed in Form 1120 by the parent or reporting company in the office of the collector of the district in which its principal office is located. The subsidiary companies are required to file Form 1122, with schedules indicated thereon, in the offices of the collectors of their respective districts. The parent company filing a consolidated return for the first time shall include therein statements setting forth:

(a) The name and address of each of subsidiary or affiliated corporations included in such return.
(b) The par value of total outstanding capital stock of each of such corporations at beginning of taxable year.
(c) The par value of such capital stock held by parent corporations or by same interests at beginning of taxable year.
(d) In case of affiliated corporations, the stock of which is owned or controlled by the same interests, a list of the individuals, partnerships, or corporations constituting such interests, with percentage of total outstanding stock of each affiliated corporation held by each of such individuals, partnerships, or corporations during all or any part of the taxable year.
(e) A schedule showing the proportionate amount of the total tax which it is agreed among them is to be assessed upon each affiliated corporation.

If substantial changes in ownership occur during the taxable year in (b) and (c), the conditions existing immediately after such changes should be shown.

Consolidated returns must be filed in columnar form so that the details of gross income items and deductions for each corporation included in the affiliated group may be readily audited.

STATUS OF PERSONAL SERVICE CORPORATIONS.—If the taxable period of two or more affiliated corporations begins **prior to Jan. 1, 1922,** and if one or more of them, taken alone, would be classed as a personal service corporation, and if one or more of the affiliated corporations would not be entitled to be so classified, those of the former class lose their status as personal service corporations, and all should be consolidated. The consolidated group may be treated as a personal service corporation if capital is not a material factor in producing its income and if its affairs are regularly conducted by the owners or stockholders.

Forms of Combinations

HOW COMBINATIONS ARE EFFECTED.—The three most popular present-day methods of effecting combinations of corporations are the **consolidation,** the **merger,** and the **holding company.** Companies are **consolidated** through the organization of a new company which buys out the business of the old ones, taking over their assets and assuming their liabilities. The stock of the new company may be exchanged directly for the net assets of the old companies, or it may be sold for cash, which is in turn used to

pay off the stockholders in the old concerns. The old companies then go out of existence, after the cash or stock received from the new company has been distributed to their stockholders.

In case of merger no new company is organized, but one of the old companies buys out the others, paying the amounts of their net worths either in cash or in stock, or both. The companies bought out then go out of existence.

In case of the holding company one of the old concerns may act as the controlling or holding company, or it may be found desirable to organize a new company for that purpose. The holding company secures its holdings in the other companies through purchase of stock from their stockholders. The companies thus controlled are known as the subsidiaries of the holding or parent company. If the holding company secures the stock of the subsidiaries by paying for it in cash, the stockholders thus bought out secure no interest in the holding company. If it pays for it by issuing its own stock, they become stockholders of the parent company.

CONSOLIDATION ILLUSTRATED.—The following are the balance sheets of Companies X and Y:

Balance Sheet—Company X

Real Estate	$100,000	Capital Stock	$150,000
Machinery	25,000	Accounts Payable	45,000
Inventories	60,000		
Cash	10,000		
	$195,000		$195,000

Balance Sheet—Company Y

Real Estate	$ 50,000	Capital Stock	$100,000
Machinery	15,000	Accounts Payable	8,000
Inventories	25,000		
Cash	18,000		
	$108,000		$108,000

Company Z is organized with a capital stock of $250,000, takes over the assets of Companies X and Y at their book values, and assumes their liabilities.

Entries on books of Company Z, the parent company:

Subscriptions		$250,000	
Capital Stock			$250,000
To record subscriptions made by Companies X and Y as follows:			
Company X	$150,000		
Company Y	100,000		
Real Estate		$100,000	
Machinery		25,000	

Inventories	60,000	
Cash	10,000	
Accounts Payable		$ 45,000
Company X, Vendor		150,000
To record purchase of assets and assumption of liabilities of Company.		
Company X, Vendor	$150,000	
Subscriptions		$150,000
To charge Company X for subscriptions, representing excess of assets over liabilities of Company X, which is amount of capital stock issued in payment.		
Real Estate	$ 50,000	
Machinery	15,000	
Inventories	25,000	
Cash	18,000	
Accounts Payable		$ 8,000
Company Y, Vendor		100,000
To record the purchase of the assets and the assumption of the liabilities of Company Y.		
Company Y, Vendor	$100,000	
Subscriptions		$100,000
To charge Company Y for subscriptions, representing the excess of assets over liabilities of Company X, which is the amount of the capital stock issued in payment.		

The balance sheet of Company Z now appears as follows:

Balance Sheet—Company Z

Real Estate	$150,000	Capital Stock	$250,000
Machinery	40,000	Accounts Payable	53,000
Inventories	85,000		
Cash	28,000		
	$303,000		$303,000

Entries on books of absorbed companies are:

Entries on books of Company X:

Company Z, Vendee	$150,000	
Accounts Payable	45,000	
Real Estate		$100,000
Machinery		25,000
Inventories		60,000
Cash		10,000
To record the sale of assets to, and the assumption of liabilities by, Company Z.		
Stock of Company Z	$150,000	
Company Z, Vendee		$150,000
To record receipt of stock of Company Z, is-		

	Debit	Credit
sued in payment of excess of value of assets transferred to Company Z over liabilities assumed by Company Z.		
Capital Stock	$150,000	
Stock of Company Z		$150,000
To record distribution of stock of Company Z to stockholders of Company X, thus closing the books of Company X.		

Entries on books of **Company Y** are same as the above, except the amounts involved.

MERGER ILLUSTRATED.—Assume that the balance sheets of Companies X and Y are as shown on page 1094, and that Company X enters into an agreement with Company Y to buy its assets and assume its liabilities, the excess of assets over liabilities to be paid for in capital stock of Company X. Since Company X's authorized capital stock is all outstanding, it is necessary to secure an additional authorization to the extent of the net worth of capital stock of Company Y, $100,000.

Entries on books of Company X:

	Debit	Credit
Subscriptions	$100,000	
Capital Stock		$100,000
To record subscription of newly authorized stock by Company Y, to be paid for by sale of its business to Company X.		
Real Estate	$ 50,000	
Machinery	15,000	
Inventories	25,000	
Cash	18,000	
Accounts Payable		$ 8,000
Company Y, Vendor		100,000
To record transfer of assets and liabilities from Company Y in accordance with agreement		
Company Y, Vendor	$100,000	
Subscriptions		$100,000
To offset credit to Company Y for net worth of business taken over against subscriptions by Company Y to capital stock of Company X.		

The balance sheet of Company X now stands thus:

Balance Sheet—Company X

Real Estate	$150,000	Capital Stock	$250,000
Machinery	40,000	Accounts Payable	53,000
Inventories	85,000		
Cash	28,000		
	$303,000		$303,000

Entries on books of Company Y, the absorbed company:

Company X, Vendee	$100,000	
Accounts Payable	8,000	
Real Estate		$ 50,000
Machinery		15,000
Inventories		25,000
Cash		18,000
To record sale of assets to, and assumption of liabilities by, Company X.		
Stock of Company X	$100,000	
Company X, Vendee		$100,000
To record receipt of stock of Company X in payment for net worth of business transferred to Company X.		
Capital Stock	$100,000	
Stock of Company X		$100,000
To record distribution of stock of Company X to stockholders of Company Y, thus closing the books of Company Y.		

HOLDING COMPANY ILLUSTRATED.—Assume that balance sheets of Companies X and Y are as shown on page 1094, and that a holding company, Company M, is formed to control them. It does this by purchasing stocks of Companies X and Y from stockholders, and so does not deal directly with these companies. The payment therefor may be in cash or in stock of Company M. For purposes of this illustration assume that Company M buys up stock of Companies X and Y by paying in stock. The total authorized stock of Company M is $250,000.

Entries on books of Company M:

Subscriptions		$250,000	
Capital Stock			$250,000
For stock subscribed as follows:			
By stockholders of Company X.	$150,000		
By stockholders of Company Y.	100,000		
Stock of Company X		150,000	
Stock of Company Y		100,000	
Subscriptions			$250,000
To record purchase of outstanding stocks of Companies X and Y.			

The variations from the above procedure in case stocks of Companies X and Y are bought for cash are unimportant. Company M in this case sells its stocks to outsiders for cash, and then uses this cash to buy the outstanding stock of Companies X and Y from stockholders. In case no new company is organized, either Company X or Company Y becomes the holding company. If Company X becomes the holding company, it increases its capital stock by at least the amount of Y's outstanding stock, $100,000, which is subscribed for by the stockholders of Company Y.

Entries on books of Company X:

Subscriptions	$100,000	
Capital Stock		$100,000
To record subscriptions by stockholders of Company Y.		

Stock of Company Y	$100,000	
Subscriptions		$100,000
To record payment by stockholders of Company B in stock of Company B.		

Balance sheet of Company M now appears thus:

Balance Sheet—Company M

Stock of Company Y	$100,000	Capital Stock	$250,000
Stock of Company X	150,000		
	$250,000		$250,000

Principles of Consolidated Balance Sheet

PRINCIPLES INVOLVED.—The separate balance sheets of the holding company and its subsidiaries do not show the true status of the group, which constitutes an operating unit. The consolidated balance sheet shows the true status of the group by eliminating non-essential items. In it all assets and liabilities are combined except intercompany accounts, which are eliminated. In setting up a consolidated balance sheet the **fundamental principle** to be followed is: **Eliminate all intercompany holdings of capital stock as well as all other intercompany balances of every kind.**

Corollary to this principle:

1. Show intercompany current accounts separately. If differences exist between them, reconcile these differences and allocate them to the proper accounts, which then should be eliminated.
2. Eliminate all intercompany profits resulting from intercompany sales above cost, thus removing such profits from inventory valuations.
3. Eliminate intercompany holdings of capital stock, and such part of surplus as is applicable to such intercompany holdings.

It should be borne in mind that these adjustments are made solely in the working papers for the consolidated balance sheet and do not affect the books of the affiliated companies.

ADJUSTMENT OF INTERCOMPANY CURRENT ACCOUNTS.—Discrepancies mentioned in (1) arise from intercompany transfer of wealth, where such transfer is taken up on books of company surrendering it but is not yet taken up on books of company receiving it, usually because it is in transit at time books are closed. Thus, if Company A ships to its subsidiary, Company B, goods, at cost, $5,000, and charges them against Company B and they are in transit when books are closed, Company A's account with Company B is charged $5,000, but there is no corresponding credit on Company B's books. The difference is reconciled by crediting intercompany current account and charging inventories in the working sheet used to compile the consolidated balance sheet. Thus:

Inventories	$5,000	
Intercompany Current Accounts		$5,000

The intercompany current accounts now exactly offset each other and are eliminated in the consolidated balance sheet.

ADJUSTMENT OF INTERCOMPANY PROFITS.—Intercompany profits (2 above) arise from intercompany sales above cost. Thus, if three companies, A, B, and C, are affiliated, and A buys an article from an independent concern for $500, sells it to B for $600, and B sells it to C for $700, considering the three concerns as a unit, inventories have been written up $200 and a paper profit of $100 shown on books of A and B, respectively. Status of the group, taken as a unit, is shown by adjusting profits, surplus, and inventory accounts. The following rule applies:

If **intercompany profit in inventory** is larger at end than at beginning of period, make an adjusting entry charging current Profit and Loss with excess, and Surplus with intercompany profits at beginning of period; credit inventories with intercompany profits at end of year.

If **intercompany profit in inventory** is less at end than at beginning of year, charge Surplus for amount at end of year, credit Inventory for amount at beginning of year, and credit current Profit and Loss for difference.

Thus, if at beginning of an accounting period intercompany profit in inventories is $5,000 and at end of period is $6,000, adjusting entry to reduce inventories to cost and to show effect of such reduction on current Profit and Loss and on Surplus is as follows:

Profit and Loss (current)	$1,000	
Surplus	5,000	
Inventories		$6,000

If figures are reversed so that inventories at beginning of year show intercompany profits of $6,000 and $5,000 at end of year, the entry is:

Surplus	$6,000	
Inventories		$5,000
Profit and Loss (current)		1,000

This form of adjustment is based on assumption that current period's Profit and Loss is kept separate from surplus accumulated during previous periods. Otherwise the adjustment consists in charging surplus with intercompany profits in inventories at close of period, and effect on current Profit and Loss would not be shown.

ADJUSTMENT OF INTERCOMPANY HOLDINGS OF CAPITAL STOCK.—Intercompany holdings of capital stock (3 above) are easily eliminated when stock of subsidiary is held at par on parent company books. It is usually held at some figure other than par, in which case it is necessary to bring accounts into agreement before intercompany holdings can be eliminated. The following rule applies:

When **book value of stock of subsidiary** in balance sheet of controlling company is **in excess of** par value of stock plus surplus of subsidiary company **applicable to such stock** at date of its acquisition by controlling company, excess should be charged to Good-Will.

When **book value of stock of subsidiary** in balance sheet of controlling company is **less than** par of stock plus surplus of subsidiary company **applicable to such stock** at date of acquisition by controlling company, difference should be credited to Good-Will account on books of subsidiary, or if no such account exists on books of subsidiary, then to Good-Will wherever found in consolidated working papers, thus being deducted either from Good-Will account of holding company or that of any other subsidiary or

subsidiaries. H. A. Finney suggests that while this is customary procedure it is not theoretically correct, and explains as follows:[1]

Assuming that subsidiary has no Good-Will account at date of acquisition, the fact that holding company acquired its stock at less than book value indicates one of two things: either (1) some asset on subsidiary's books was overvalued, or (2) the holding company made a fortunate purchase, acquiring right to more net assets than it parted with. If some asset was overvalued, excess of book value over purchase price should be deducted on consolidated balance sheet from the overvalued asset. If no subsidiary asset was overvalued, and if holding company acquired subsidiary stock by an issue of its own stock, excess value received over par of stock issued in payment is paid-in surplus, to be shown on consolidated balance sheet as surplus, set apart as capital surplus if the distinction is desired. If holding company acquired subsidiary stock by a cash payment, excess still appears to be a proper addition to capital surplus.[2]

Assume that holding Company A holds ¾ of outstanding stock of subsidiary Company B, total of which amounts to \$100,000; also that at time of purchase of this stock by A surplus of B was \$60,000. Since A purchased ¾ of outstanding stock of B, ¾ of surplus at time of acquisition of stock, or \$45,000, is applicable to stock held by A. Assuming that A bought the stock of B at 170, a total cost of \$127,500, this is the figure at which stock of B should be carried on A's books. It is in excess of par of stock plus surplus of B applicable to such stock at date of acquisition by A, which was:

Par of stock bought by A..............	\$75,000
Surplus applicable to stock bought by A (¾ of total surplus at time of acquisition by A)........................	45,000
	\$120,000

Therefore book value of stock of B on A's books (\$127,500) is \$7,500 in excess of par value of the stock plus surplus of subsidiary company applicable to such stock at date of its acquisition by controlling Company A, and this excess should be charged to Good-Will. In form of a journal entry the adjustment is:

Capital stock (of B owned by A)..............	\$75,000	
Surplus..................................	45,000	
Good-Will................................	7,500	
Investment in Stock of B..............		\$127,500

This eliminates the intercompany holding of capital stock, also surplus of subsidiary company applicable to such stock at date of acquisition, and charges Good-Will for excess of cost of such stock over and above its par value plus surplus applicable to it at date of acquisition.

If parent company holds all of outstanding stock of subsidiary above adjustments, eliminate all surplus of subsidiary as it stood at date of acquisition. **If parent company acquires only part of stock of subsidiary,** only such portion of surplus is eliminated in consolidated balance sheet as is applicable to stock acquired. Remainder enters into consolidated balance sheet as surplus of subsidiaries applicable to stock outstanding in hands of public. Also stock outstanding is shown in consolidated balance sheet as

[1] Adapted from Consolidated Statements, pp. 74–75
[2] End of adapted material.

stock outstanding in hands of public. The two items, capital stock of subsidiaries outstanding and surplus applicable thereto, may be shown as one item, as for example, outstanding capital stock of subsidiary companies, or similar title. Subsequent profits earned must likewise be allocated to the two subdivisions of subsidiary company stocks, viz., (a) that outstanding in hands of public, and (b) that owned by parent company.

WORKING PAPERS FOR CONSOLIDATED BALANCE SHEET.—To combine similar assets and eliminate intercompany items, **working papers** should be drawn up which show columns for each of the **balance sheets** of the affiliated companies, columns to show **eliminated items,** and columns to show **consolidated balance sheet items.** Following illustration of consolidated balance sheet working papers is based on balance sheets of subsidiaries X and Y shown on page 1094, and balance sheet of holding Company M shown on page 1098:

Working Papers for Consolidated Balance Sheet

	M	X	Y	Eliminations	Consolidated
Assets					
Investment in Stock of Company X..	$150,000			$150,000	
Investment in Stock of Company Y..	100,000			100,000	
Real Estate.......		$100,000	$ 50,000		$150,000
Machinery........		25,000	15,000		40,000
Inventories.......		60,000	25,000		85,000
Cash............		10,000	18,000		28,000
	$250,000	$195,000	$108,000	$250,000	$303,000
Liabilities					
Capital Stock....	$250,000	$150,000	$100,000	$250,000	$250,000
Accounts Payable..		45,000	8,000		53,000
	$250,000	$195,000	$108,000	$250,000	$303,000

The consolidated balance sheet prepared from above working papers follows:

Consolidated Balance Sheet
Companies M, X, and Y
As at ....

Real Estate....................	$150,000	Capital Stock, Company M.....	$250,000
Machinery.....................	40,000	Accounts Payable..............	53,000
Inventories....................	85,000		
Cash..........................	28,000		
	$303,000		$303,000

More detailed illustrations are found in following pages.

Effect of Surplus or Deficit in Balance Sheet of Subsidiary Company at Time of Acquisition

STATUS OF SURPLUS ACCUMULATED BEFORE AFFILIATION.—The amount of **surplus** existing on a subsidiary company's balance sheet at date its stock is acquired by parent company, determines the book value of stock so acquired and hence its cost to the holding company. If all of the subsidiary's stock is acquired by the parent company, it is evident that the entire surplus as well as the capital stock of the subsidiary company becomes a liability to the holding company, and, being an intercompany account, should be eliminated in the consolidated balance sheet. If only part of subsidiary's stock is acquired by parent company, the stock acquired and that portion of surplus applicable to stock so acquired should be eliminated in the consolidated balance sheet.

Likewise, a **deficit** on books of subsidiary at time of acquisition of stock by parent company must be eliminated, wholly if entire stock is acquired, or if only a part of stock is acquired, then such part thereof must be eliminated as the part of total stock acquired is part of subsidiary's total stock outstanding.

SURPLUS ILLUSTRATED.—Company Y's balance sheet at date of acquisition of its entire capital stock by Company X is as follows:

Balance Sheet—Company Y

Real Estate	$100,000	Capital Stock	$100,000
Cash	25,000	Surplus	20,000
		Accounts Payable	5,000
	$125,000		$125,000

After acquisition of entire capital stock of Company Y, Company X's balance sheet is as follows:

Balance Sheet—Company X

Stock of Company Y	$120,000	Capital Stock	$150,000
Cash	50,000	Accounts Payable	20,000
	$170,000		$170,000

The account "Stock of Company Y, $120,000," is an investment account on Company X's books. It is an intercompany account offset by the Capital and Surplus accounts in books of Company Y. It follows that these accounts should be eliminated in the consolidated balance sheet. The procedure is as follows:

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$120,000		$120,000	
Real Estate		$100,000		$100,000
Cash	50,000	25,000		75,000
	$170,000	$125,000	$120,000	$175,000
Liabilities				
Capital Stock	$150,000	$100,000	$100,000	$150,000
Surplus		20,000	20,000	
Accounts Payable	20,000	5,000		25,000
	$170,000	$125,000	$120,000	$175,000

Consolidated Balance Sheet
Companies X and Y

Real Estate	$100,000	Capital Stock	$150,000
Cash	75,000	Accounts Payable	25,000
	$175,000		$175,000

DEFICIT ILLUSTRATED.—When there is a deficit on books of subsidiary company and its entire capital stock is acquired by parent company, entire deficit is eliminated in consolidated balance sheet. If only a part of its capital stock is acquired by parent company, only the deficit applicable to portion of stock acquired is eliminated.

Company Y's balance sheet at date of acquisition of its entire capital stock by Company X is as follows:

Balance Sheet—Company Y

Real Estate	$100,000	Capital Stock	$100,000
Cash	5,000	Accounts Payable	15,000
Deficit	10,000		
	$115,000		$115,000

After acquisition of entire capital stock of Company Y, Company X's balance sheet is as follows:

Balance Sheet—Company X

Stock of Company Y	$ 90,000	Capital Stock	$150,000
Cash	65,000	Accounts Payable	5,000
	$155,000		$155,000

The account "Stock of Company Y" on books of Company X is offset by the Capital Stock and Deficit accounts in books of Company Y. Hence these accounts should be eliminated in the consolidated balance sheet.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 90,000		$ 90,000	
Real Estate		$100,000		$100,000
Cash	65,000	5,000		70,000
Deficit		10,000	10,000	
	$155,000	$115,000	$100,000	$170,000
Liabilities				
Capital Stock	$150,000	$100,000	$100,000	$150,000
Accounts Payable	5,000	15,000		20,000
	$155,000	$115,000	$100,000	$170,000

Consolidated Balance Sheet
Companies X and Y

Real Estate	$100,000	Capital Stock	$150,000
Cash	70,000	Accounts Payable	20,000
	$170,000		$170,000

MINORITY INTEREST.—In preceding illustrations showing method of eliminating surplus or deficit of subsidiary at date of acquisition of stock by parent company, there remained no minority interest because in both instances entire outstanding capital stock of subsidiary company was acquired by parent company. If parent company acquires less than 100% interest in subsidiary company, the minority interest must be considered in setting up the consolidated balance sheet. Effect is given to the interests of the minority by eliminating in the consolidated balance sheet only such proportion of subsidiary's outstanding stock as is acquired by holding company and such part of subsidiary's surplus or deficit as is applicable thereto. This is true because the capital liability to the minority stockholders represented by their proportionate amount of capital stock and surplus or deficit applicable thereto is not an intercompany relationship.

MINORITY INTEREST WITH A SUBSIDIARY SURPLUS ILLUSTRATED.—Assume that Company Y's balance sheet at date of acquisition of 75% of its entire outstanding capital stock by Company X, is as follows:

Balance Sheet—Company Y

Real Estate	$100,000	Capital Stock	$100,000
Cash	25,000	Surplus	20,000
		Accounts Payable	5,000
	$125,000		$125,000

After acquisition of 75% of capital stock of Company Y, Company X's balance sheet is as follows:

Balance Sheet—Company X

Stock of Company Y	$ 90,000	Capital Stock	$150,000
Cash	80,000	Accounts Payable	20,000
	$170,000		$170,000

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 90,000		$ 90,000	
Real Estate		$100,000		$100,000
Cash	80,000	25,000		105,000
	$170,000	$125,000	$ 90,000	$205,000
Liabilities				
Capital Stock	$150,000	$100,000	$ 75,000	$175,000
Surplus		20,000	15,000	5,000
Accounts Payable	20,000	5,000		25,000
	$170,000	$125,000	$ 90,000	$205,000

Consolidated Balance Sheet—Companies X and Y

Real Estate	$100,000	Capital Stock	$150,000
Cash	105,000	Capital Stock of Company Y, Outstanding	25,000
		Surplus applicable to Outstanding Stock of Company Y	5,000
		Accounts Payable	25,000
	$205,000		$205,000

MINORITY INTEREST WITH A SUBSIDIARY DEFICIT ILLUSTRATED.—Assume that Company Y's balance sheet at date of acquisition of 75% of its entire outstanding capital stock by Company X, is as follows:

Balance Sheet—Company Y

Real Estate	$ 80,000	Capital Stock	$100,000
Cash	5,000	Accounts Payable	5,000
Deficit	20,000		
	$105,000		$105,000

After acquisition of 75% of capital stock of Company Y, Company X's balance sheet is as follows:

Balance Sheet—Company X

Stock of Company Y	$ 60,000	Capital Stock	$150,000
Cash	110,000	Accounts Payable	20,000
	$170,000		$170,000

Working Papers fo Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 60,000		$ 60,000	
Real Estate		$ 80,000		$ 80,000
Cash	110,000	5,000		115,000
Deficit		20,000	15,000	5,000
	$170,000	$105,000	$75,000	$200,000
Liabilities				
Capital Stock	$150,000	$100,000	$75,000	$175,000
Accounts Payable	20,000	5,000		25,000
	$170,000	$105,000	$75,000	$200,000

Consolidated Balance Sheet—Companies X and Y

Real Estate	$ 80,000	Capital Stock	$150,000
Cash	115,000	Capital Stock of Company Y Outstanding	25,000
Deficit applicable to Outstanding Stock of Company Y	5,000	Accounts Payable	25,000
	$200,000		$200,000

Purchase of Stock of Subsidiary at More Than Book Value

When the holding company acquires all or a part of capital stock of a subsidiary by paying **more than book value** therefor, the excess paid above book value is in the nature of a premium and should be charged to **Good-Will** in the consolidated balance sheet.

100% STOCK ACQUISITION ILLUSTRATED.—Company Y's balance sheet at date of acquisition of its entire capital stock by Company X is as follows:

Balance Sheet—Company Y

Real Estate	$100,000	Capital Stock	$100,000
Cash	5,000	Accounts Payable	5,000
	$105,000		$105,000

After acquisition of entire capital stock of Company Y for $110,000, Company X's balance sheet stands thus:

Balance Sheet—Company X

Stock of Company Y	$110,000	Capital Stock	$150,000
Cash	50,000	Accounts Payable	10,000
	$160,000		$160,000

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$110,000		$100,000	
Good-Will				$ 10,000
Real Estate		$100,000		100,000
Cash	50,000	5,000		55,000
	$160,000	$105,000	$100,000	$165,000
Liabilities				
Capital Stock	$150,000	$100,000	$100,000	$150,000
Accounts Payable	10,000	5,000		15,000
	$160,000	$105,000	$100,000	$165,000

Consolidated Balance Sheet
Companies X and Y

Good-Will	$ 10,000	Capital Stock	$150,000
Real Estate	100,000	Accounts Payable	15,000
Cash	55,000		
	$165,000		$165,000

75% STOCK ACQUISITION ILLUSTRATED.—Company Y's balance sheet at date of acquisition of 75% of its capital stock by Company X, is as follows:

Balance Sheet—Company Y

Real Estate	$100,000	Capital Stock	$100,000
Cash	5,000	Accounts Payable	5,000
	$105,000		$105,000

After acquisition of 75% of capital stock of Company Y for $80,000, Company X's balance sheet stands thus:

Balance Sheet—Company X

Stock of Company Y	$ 80,000	Capital Stock	$150,000
Cash	80,000	Accounts Payable	10,000
	$160,000		$160,000

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 80,000		$ 75,000	
Good-Will				$ 5,000
Real Estate		$100,000		100,000
Cash	80,000	5,000		85,000
	$160,000	$105,000	$75,000	$190,000
Liabilities				
Capital Stock	$150,000	$100,000	$75,000	$175,000
Accounts Payable	10,000	5,000		15,000
	$160,000	$105,000	$75,000	$190,000

Consolidated Balance Sheet
Companies X and Y

Good-Will	$ 5,000	Capital Stock	$175,000
Real Estate	100,000	Accounts Payable	15,000
Cash	85,000		
	$190,000		$190,000

100% STOCK ACQUISITION AND SUBSIDIARY SURPLUS.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and surplus of $25,000. Holding Company X acquires all of stock for $135,000.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$135,000		$125,000	
Good-Will				$ 10,000
Real Estate		115,000		115,000
Cash	15,000	10,000		25,000
	$150,000	$125,000	$125,000	$150,000
Liabilities				
Capital Stock	$150,000	$100,000	$100,000	$150,000
Surplus		25,000	25,000	
	$150,000	$125,000	$125,000	$150,000

Consolidated Balance Sheet
Companies X and Y

Good-Will	$ 10,000	Capital Stock	$150,000
Real Estate	115,000		
Cash	25,000		
	$150,000		$150,000

75% STOCK ACQUISITION AND SUBSIDIARY SURPLUS.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and surplus of $25,000. Holding Company X acquires 75% of stock for $100,000.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y..........	$100,000		$93,750	
Good-Will..............				$ 6,250
Real Estate..............		$115,000		115,000
Cash....................	15,000	10,000		25,000
	$115,000	$125,000	$93,750	$146,250
Liabilities				
Capital Stock.............	$115,000	$100,000	$75,000	$140,000
Surplus.................		25,000	18,750	6,250
	$115,000	$125,000	$93,750	$146,250

Consolidated Balance Sheet—Companies X and Y

Good-Will....................	$ 6,250	Capital Stock of Company X...	$115,000
Real Estate..................	115,000	Capital Stock of Company Y Outstanding................	25,000
Cash.........................	25,000	Surplus of Company Y (on Stock Outstanding)...............	6,250
	$146,250		$146,250

100% STOCK ACQUISITION AND SUBSIDIARY DEFICIT.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and a deficit of $25,000. Holding Company X acquires all of stock for $85,000.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y..........	$ 85,000		$ 75,000	
Good-Will..............				$ 10,000
Real Estate..............		$115,000		115,000
Cash....................	15,000	10,000		25,000
Deficit		25,000	25,000	
	$100,000	$150,000		$150,000
Liabilities				
Capital Stock	$100,000	$100,000	$100,000	$100,000
Accounts Payable.....		50,000		50,000
	$100,000	$150,000	$100,000	$150,000

Consolidated Balance Sheet
Companies X and Y

Good-Will	$ 10,000	Capital Stock	$100,000
Real Estate	115,000	Accounts Payable	50,000
Cash	25,000		
	$150,000		$150,000

75% STOCK ACQUISITION AND SUBSIDIARY DEFICIT.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and a deficit of $25,000. Holding Company X acquires 75% of stock for $85,000.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 85,000		$ 56,250	
Good-Will				$ 28,750
Real Estate		$115,000		115,000
Cash	15,000	10,000		25,000
Deficit		25,000	18,750	6,250
	$100,000	$150,000	$75,000	$175,000
Liabilities				
Capital Stock	$100,000	$100,000	$75,000	$125,000
Accounts Payable		50,000		50,000
	$100,000	$150,000	$75,000	$175,000

Consolidated Balance Sheet
Companies X and Y

Good-Will	$ 28,750	Capital Stock of Company X	$100,000
Real Estate	115,000	Capital Stock of Company Y Outstanding	25,000
Cash	25,000	Accounts Payable	50,000
Deficit applicable to Outstanding Stock of Company Y	6,250		
	$175,000		$175,000

Purchase of Stock of Subsidiary at Less Than Book Value

When the holding company acquires all or a part of the capital stock of a subsidiary by paying **less than book value** therefor, the excess of book value over amount paid is a deduction from **Good-Will.**

100% STOCK ACQUISITION ILLUSTRATED.—Company Y's balance sheet at date of acquisition of its entire capital stock by Company X is as follows:

Balance Sheet—Company Y

Good-Will	$ 50,000	Capital Stock	$100,000
Real Estate	100,000	Accounts Payable	55,000
Cash	5,000		
	$155,000		$155,000

After acquisition of entire capital stock of Company Y for $90,000, Company X's balance sheet is as follows:

Balance Sheet—Company X

Stock of Company Y	$ 90,000	Capital Stock	$100,000
Cash	10,000		
	$100,000		$100,000

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 90,000		$ 90,000	
Real Estate		$100,000		$100,000
Good-Will		50,000	10,000	40,000
Cash	10,000	5,000		15,000
	$100,000	$155,000	$100,000	$155,000
Liabilities				
Capital Stock	$100,000	$100,000	$100,000	$100,000
Accounts Payable		55,000		55,000
	$100,000	$155,000	$100,000	$155,000

Consolidated Balance Sheet
Companies X and Y

Real Estate	$100,000	Capital Stock	$100,000
Good-Will	40,000	Accounts Payable	55,000
Cash	15,000		
	$155,000		$155,000

75% STOCK ACQUISITION ILLUSTRATED.—(Individual balance sheets omitted.) Company X acquires only 75% of outstanding stock of Company Y, for which it pays $70,000.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$70,000		$70,000	
Real Estate		$100,000		$100,000
Good-Will		50,000	5,000	45,000
Cash	10,000	5,000		15,000
	$80,000	$155,000	$75,000	$160,000
Liabilities				
Capital Stock	$80,000	$100,000	$75,000	$105,000
Accounts Payable		55,000		55,000
	$80,000	$155,000	$75,000	$160,000

Consolidated Balance Sheet
Companies X and Y

Real Estate	$100,000	Capital Stock of Company X	$ 80,000
Good-Will	45,000	Capital Stock of Company Y Outstanding	25,000
Cash	15,000	Accounts Payable	55,000
	$160,000		$160,000

100% STOCK ACQUISITION AND SUBSIDIARY SURPLUS.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and surplus of $25,000. Holding Company X acquires all of stock for $115,000, or $10,000 less than book value.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$115,000		$115,000	
Real Estate		$100,000		$100,000
Good-Will		50,000	10,000	40,000
Cash	10,000	5,000		15,000
	$125,000	$155,000	$125,000	$155,000
Liabilities				
Capital Stock	$ 80,000	$100,000	$100,000	$ 80,000
Surplus	40,000	25,000	25,000	40,000
Accounts Payable	5,000	30,000		35,000
	$125,000	$155,000	$125,000	$155,000

Consolidated Balance Sheet—Companies X and Y

Real Estate	$100,000	Capital Stock	$ 80,000
Good-Will	40,000	Surplus	40,000
Cash	15,000	Accounts Payable	35,000
	$155,000		$155,000

75% STOCK ACQUISITION AND SUBSIDIARY SURPLUS.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and surplus of $25,000. Holding Company X acquires 75% of stock for $90,000, or $3,750 less than book value.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$ 90,000		$ 90,000	
Real Estate		$100,000		$100,000
Good-Will		50,000	3,750	46,250
Cash	10,000	5,000		15,000
	$100,000	$155,000	$93,750	$161,250
Liabilities				
Capital Stock	$ 80,000	$100,000	$75,000	$105,000
Surplus		25,000	18,750	6,250
Accounts Payable	20,000	30,000		50,000
	$100,000	$155,000	$93,750	$161,250

Consolidated Balance Sheet
Companies X and Y

Real Estate	$100,000	Capital Stock of Company X	$ 80,000
Good-Will	46,250	Capital Stock of Company Y Outstanding	25,000
Cash	15,000	Surplus	6,250
		Accounts Payable	50,000
	$161,250		$161,250

100% STOCK ACQUISITION AND SUBSIDIARY DEFICIT.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and a deficit of $25,000. Holding Company X acquires all of stock for $65,000, which is $10,000 less than its book value.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$65,000		$ 65,000	
Real Estate		$115,000		$115,000
Cash	15,000	10,000		25,000
Good-Will		15,000	10,000	5,000
Deficit		25,000	25,000	
	$80,000	$165,000	$100,000	$145,000
Liabilities				
Capital Stock	$80,000	$100,000	$100,000	$ 80,000
Accounts Payable		65,000		65,000
	$80,000	$165,000	$100,000	$145,000

Consolidated Balance Sheet
Companies X and Y

Real Estate	$115,000	Capital Stock	$ 80,000
Cash	25,000	Accounts Payable	65,000
Good-Will	5,000		
	$145,000		$145,000

75% STOCK ACQUISITION AND SUBSIDIARY DEFICIT.—(Individual balance sheets omitted.) Subsidiary Company Y at date of acquisition has capital stock of $100,000 and a deficit of $25,000. Holding Company X acquires 75% of stock for $50,000, which is $6,250 less than its book value.

Working Papers for Consolidated Balance Sheet

	X	Y	Eliminations	Consolidated
Assets				
Investment in Stock of Company Y	$50,000		$50,000	
Real Estate		$115,000		$115,000
Cash	15,000	10,000		25,000
Good-Will		15,000	6,250	8,750
Deficit		25,000	18,750	6,250
	$65,000	$165,000	$75,000	$155,000
Liabilities				
Capital Stock	$60,000	$100,000	$75,000	$ 85,000
Accounts Payable	5,000	65,000		70,000
	$65,000	$165,000	$75,000	$155,000

Consolidated Balance Sheet
Companies X and Y

Real Estate	$115,000	Capital Stock of Company X	$ 60,000
Cash	25,000	Capital Stock of Company Y Outstanding	25,000
Good-Will	8,750	Accounts Payable	70,000
Deficit	6,250		
	$155,000		$155,000

Application of Principles

WHEN CONSOLIDATION IS DESIRABLE.—Consolidation of accounts is desirable whenever all, or practically all, of the capital stock of one company is owned by another. Where stock ownership ranges between 50% and 95%, conditions must be allowed to determine whether or not consolidation is desirable. The test is whether or not the affiliated corporations constitute an economic unit guided by the same management. It is for this reason that it is sometimes desirable to consolidate accounts of companies which are controlled by the same interests although not directly related by stock ownership. In such cases the problem of the elimination of intercompany holdings of stock does not arise, and it is merely necessary to eliminate intercompany balances and profits.

TWO CLASSES OF STATEMENTS.—One class of consolidated statements shows simply the results of consolidation. The other class shows the accounts of individual companies, the elimination, and the items consolidated. Which form should be used must be determined upon the requirements of each case. If it is desired to show the status of the affiliated concerns simply as a unit, the consolidated figures only need be presented. If, however, it is desired to show the status of the constituent companies, the separate statements as well as their consolidation should be shown. Usually, in published reports only the consolidated figures are given.

PRACTICAL CONSIDERATIONS.—Although, theoretically, it is necessary to eliminate all intercompany balances on current account, it is sometimes found in practice that some small items not yet adjusted can best be permitted to remain unadjusted in the working papers for the consolidated statements. If such items were taken up on the working papers for the consolidated statements but not on the books, a discrepancy would arise between the statements and the books; if taken up on the books, the work involved would not be justified by the mere technical accuracy achieved. Ordinarily the smaller balance should be eliminated, the remainder of the larger being left in the Accounts Receivable or Accounts Payable account; but in some cases it may be desirable to describe the uneliminated items in the consolidated balance sheet.

Sometimes items which appear as asset items on the balance sheet of one company and as liabilities on the balance sheet of another or other companies are not in agreement because the asset account has been written down. Since the entire amount of the liability must be eliminated, it is necessary to insert a red figure in the eliminations column increasing surplus by the amount of the difference. If a reserve has been established, in place of writing down the asset, the reserve should be eliminated against such increase of surplus.

Bonds of one company purchased by an affiliated company at a discount require same treatment as discrepancies explained above. If, however, issuing company sold them at a discount and still carries some or all of such discount as a deferred charge, a somewhat different procedure is necessary. Thus, assume Corporation X owns $10,000 par of bonds of Corporation Y bought for $9,800, and carried at that amount. Corporation Y sold these bonds, which run for a term of 10 years, 5 years ago at 90, or a discount of $1,000 on the above bonds, of which $500 remains unamortized. The elimination is:

Bonds	$10,000	
Surplus	300	
Bond Investment		$9,800
Bond Discount Unamortized		500

Surplus at date of acquisition has been considered in preceding pages. The following comments merely supplement the discussion of principles found elsewhere. If a holding company acquires all of the capital stock of a subsidiary which has a surplus, it acquires the surplus also, and it is clear that the amount of such surplus as at date of acquisition should be eliminated on the consolidated balance sheet along with the capital stock acquired. If the holding company paid more than the par value of the stock plus the surplus of the subsidiary, it paid for **good-will.** If it paid less than par of stock of subsidiary plus surplus, it made a profit, but not an operating profit;

consequently it should be treated as **capital surplus,** unless some item on books of subsidiary has been overvalued, in which case it should be deducted from the overvalued asset. If, however, in connection with the purchase a Good-Will account has been set up, it should be deducted from it. Circumstances may make it desirable to depart somewhat from this terminology, possibly to secure a somewhat more distinctive title for these items. In case cost of subsidiary's stock is in excess of book value (par value plus surplus at acquisition date), the excess, instead of being charged to Good-Will, might be charged to a distinctive account such as "Cost of Stock of Subsidiary in Excess of Its Book Value on Date of Acquisition;" and in case cost of subsidiary's stock is below book value, the difference, instead of being credited to capital surplus, might be credited to a distinctive account such as "Excess of Book Value of Stock of Subsidiary on Date of Acquisition Over Its Cost."

If the amount of surplus of subsidiary at date of acquisition is small as compared with total surplus, it is feasible to permit it to stand, only the par value of the stock of subsidiary being eliminated. Even when it is considerable it may be permitted to stand if given a distinctive caption stating that it represents surplus earned prior to acquisition date, thus distinguishing it from other surplus.

SIMPLE PLAN OF HANDLING SURPLUS AT DATE OF ACQUISITION.—The following illustration of a simple but practically correct plan for handling surplus of subsidiary as at date of acquisition is based on the discussion given by W. H. Bell in his "Accountants' Reports" (pp. 151-156):

Assume that the par value of stock of subsidiary company, all of which is acquired, is $100,000, and that surplus of subsidiary at date of acquisition amounted to $50,000. Holding company purchased the total stock for $125,000, or $25,000 less than its book value. At date of balance sheet combined surplus amounts to $100,000.

Since the holding company acquires stock having a book value of $150,000 for $125,000, there results a capital surplus of $25,000. At date of balance sheet free consolidated surplus amounts to $100,000 (combined surplus) less $50,000 (surplus of subsidiary at date of acquisition), or $50,000. **In the balance sheet** the surplus may be shown thus:

Surplus:	
Profit and Loss Surplus	$ 50,000
Capital Surplus (excess of net worth of subsidiary at date of acquisition over cost of its stock to holding company)	25,000
Total Surplus	$ 75,000

Another plan of statement is:

Surplus:	
Combined Surplus (date of balance sheet)	$100,000
Deduct excess of cost over par of subsidiary's stock	25,000
Net Surplus	$ 75,000

If cost to the holding company is less than the net worth of subsidiary as at date of acquisition, the second method above cannot be followed, because in that case good-will arises, which cannot be deducted from surplus.

If stock of subsidiary has been acquired at various dates, it is probably best to regard the date at which control is actually acquired as the date of acquisition. An alternative plan is to regard as the date of acquisition the date of purchase of the last large block of stock. The date of closing books nearest to such date must, for practical reasons, be adopted.

If less than 100% of subsidiary's stock is acquired, the procedure must be altered so as to show the minority's interest in the consolidated balance sheet, both as to the par value of stock held and as to their share in subsidiary's surplus or deficit. If the subsidiary has a surplus, the two following methods are practicable for showing the interest of the minority:

(1) Capital Stock:
  Stock of Holding Company
  Stock of Subsidiary Company Outstanding
    Total
 Surplus:
  Applicable to Stock of Holding Company
  Applicable to Stock of Subsidiary Company Outstanding
    Total

(2) Equity of Subsidiary Stock Outstanding:
  Capital Stock
  Surplus
    Total
 Equity of Holding Company Stock:
  Capital Stock
  Surplus
    Total

When less than the whole of the subsidiary's stock is acquired, only the holding company's part of surplus as at date of acquisition should be eliminated. The minority interest in such surplus should be extended and shown in the consolidated balance sheet. To illustrate proper procedure assume the following facts:

Capital stock of subsidiary	$200,000
Subsidiary's surplus, date of acquisition	50,000
Per cent of subsidiary's stock acquired by holding company	75%
Value of stock acquired by holding company	187,500
Purchase price of stock acquired by holding company	195,000
Subsidiary's surplus at date of balance sheet	90,000

In the consolidated balance sheet the interests of minority stockholders are shown thus:

Capital Stock	$ 50,000
Surplus	22,500
	$ 72,500

On the asset side of the balance sheet Good-Will account will appear charged with $7,500, excess of purchase price of stock of subsidiary over its book value. The eliminations from asset and liability accounts are as follows:

Asset Side:		
Investment in Stock of Subsidiary		$195,000
Liability Side:		
Capital Stock	$200,000	
Surplus (amount at date of acquisition plus 25% of increase)	60,000	
		260,000
Net Liability		$ 65,000

for which the following is substituted:

Asset Side:	
Good-Will (excess of investment account over amount at date of acquisition)	$ 7,500
Liability Side:	
Equity of Minority Stockholders	72,500
Net Liability	$ 65,000

It is next necessary to consider this data in connection with the income statement. At the time the acquisition is made by the holding company the minority interest in surplus amounts to $12,500. If the entire surplus of $90,000 is shown in the profit and loss statement, it is impossible to deduct therefrom the holding company's interest in surplus as at date of acquisition, viz., $37,500, which leaves $52,500 as surplus earned since date stock of subsidiary was acquired, divisible into 2,000 shares, because during this period there has been earned $40,000, and $12,500 is divisible into 500 shares. Consequently total surplus at date of acquisition, $50,000, should be eliminated from the income statement. Separate accounts should be set up, $37,500 being carried as surplus applicable to the majority interest and $12,500 to the minority interest. If in the balance sheet it is desirable to show full details of the division of surplus, with reference to the income statement, the following form should be used. It is assumed that surplus of holding company from sources other than earnings of subsidiary is $150,000.

Surplus:	
Profit and Loss Surplus:	
Applicable to Holding Company's Stock	$172,500
Applicable to Outstanding Stock of Subsidiary	7,500
Total	$180,000
Subsidiary's Surplus at Date of Acquisition Applicable to Stock held by Minority	12,500
Total Surplus	$192,500

Working Papers Illustrated

The following working sheets employed for the derivation of the consolidated balance sheet and consolidated income statement illustrate the procedure followed by the American Telephone & Telegraph Co.:

BALANCE SHEET

Exhibit A—Consolidated Balance Sheet.

" B—Balance Sheets at December 31, 1921, of six companies individually designated as Company A, B, C, D, E, and F.

" C—Work Sheets containing in the aggregate 54 columns with headings corresponding to those shown on the 54 lines of the Balance Sheet.

The figures for each company have been transferred from the Balance Sheets to these Work Sheets, totaled, and the intercompany duplications (red figures; here italics) excluded.

The total of each column has been transferred to the Consolidated Balance Sheet, Exhibit A.

" D—List of duplications showing the ownership by certain companies of stock, bonds, notes, and accounts of other companies.

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COMBINED TELEPHONE

BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204).......	2,963,748			1
2	Right of Way (207)..................	7,430,615			2
3	Land and Buildings (211, 212).........	40,818,848			3
4	Central Office Equipment (221, 222)....	53,303,412			4
5	Station Equipment (231 to 235)........	45,492,081			5
6	Exchange Lines (241 to 246)...........	181,682,966			6
7	Toll Lines (251 to 256)...............	57,611,272			7
8	Other Plant (268, 270, 280)...........	938,560			8
9	General Equipment (261 to 265).......	4,775,526			9
10	Total Fixed Capital.................	395,017,028			10
11	Construction Work in Progress (104)....	4,670,809			11
12	Investment Securities (106 to 109)......	19,125,731			12
13	Advances to System Corporation for Constr., etc. (110)..................	13,196,841			13
14	Miscellaneous Investments (111).......	1,228,822			14
15	**Total Permanent and Long Term Investments**...................	433,239,231			15
16	Cash and Deposits (113, 114)..........	6,058,840			16
17	Marketable Securities (116)...........	82,051			17
18	Bills Receivable (117)................	2,984,334			18
19	Accounts Receivable (115, 118 to 121, 123)............................	12,740,226			19
20	Materials and Supplies (122 less 122–10)..	4,858,856			20
21	**Total Working Assets**............	26,724,307			21
22	**Accrued Income Not Due** (124)......	690,148			22
23	Sinking Fund Assets (125)..........	385,779			23
24	Prepayments (129 to 133)..........	1,015,904			24
25	Unamortized Debt Discount and Expense (135)............	1,230,823			25
26	Other Deferred Debits (126, 127, 136)..	133,152			26
27	**Total Deferred Debit Items**........	2,765,658			27
28	**Total Assets**..............	463,419,344			28

MONTHLY REPORT No. 2

OPERATING COMPANIES A TO F

31, 1921 **EXHIBIT A**

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, ——————————)	192,432,150			29
30	Capital Stock, Pref. (150–02) (Authorized, ——————————)				30
31	Capital Stock Installments (150–04)				31
32	**Total Capital Stock**	192,432,150			32
33	**Premiums on Capital Stock (152)**	0			33
34	Funded Debt (153)	128,716,900			34
35	Advances from System Corporations for Constr., etc. (155)	3,517,946			35
36	**Total Long Term Debt**	132,234,846			36
37	Bills Payable (157)	3,420,000			37
38	Accounts Payable (158 to 165)	6,940,316			38
39	**Total Working Liabilities**	10,360,316			39
40	**Accrued Liabilities Not Due** (166, 167)	2,953,397			40
41	Unextinguished Premium on Debt (168)	0			41
42	Insurance and Casualty Reserves (169)	551,723			42
43	Liability for Employees' Benefit Fund (170–01, 170–02)	4,185,000			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)	0			44
45	Other Deferred Credit Items (170-A)	376,150			45
46	**Total Deferred Credit Items**	5,112,873			46
47	Reserve for Accrued Depreciation (102)	72,435,431			47
48	Reserve for Amortization of Intangible Capital (103)	755,710			48
49	**Total Fixed Capital Reserves**	73,191,141			49
50	Undivided Profits, Since Dec. 31, last	9,828,225			50
51	Appropriated Surplus (171 to 173)	4,997,953			51
52	Corporate Surplus Unappropriated (174, 137)	32,308,443			52
53	**Total Surplus and Undivided Profits**	47,134,621			53
54	**Total Liabilities**	463,419,344			54

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BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204)	0			1
2	Right of Way (207)	1,318,717			2
3	Land and Buildings (211, 212)	5,905,722			3
4	Central Office Equipment (221, 222)	8,438,330			4
5	Station Equipment (231 to 235)	7,493,193			5
6	Exchange Lines (241 to 246)	29,251,700			6
7	Toll Lines (251 to 256)	13,206,156			7
8	Other Plant (268, 270, 280)	607,202			8
9	General Equipment (261 to 265)	1,034,905			9
10	Total Fixed Capital	67,255,925			10
11	Construction Work in Progress (104)	0			11
12	Investment Securities (106 to 109)	4,221,132			12
13	Advances to System Corporation for Constr., etc. (110)	367,221			13
14	Miscellaneous Investments (111)	0			14
15	**Total Permanent and Long Term Investments**	71,844,278			15
16	Cash and Deposits (113, 114)	663,549			16
17	Marketable Securities (116)	451			17
18	Bills Receivable (117)	17,386			18
19	Accounts Receivable (115, 118 to 121, 123)	2,187,470			19
20	Materials and Supplies (122 less 122–10)	228,432			20
21	**Total Working Assets**	3,097,288			21
22	**Accrued Income Not Due** (124)	26,429			22
23	Sinking Fund Assets (125)	0			23
24	Prepayments (129 to 133)	97,172			24
25	Unamortized Debt Discount and Expense (135)	0			25
26	Other Deferred Debits (126, 127, 136)	0			26
27	**Total Deferred Debit Items**	97,172			27
28	**Total Assets**	75,065,167			28

MONTHLY REPORT No. 2

PANY A

31, 1921 **EXHIBIT B**

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, — — — — — — — — — — — —)	43,193,200			29
30	Capital Stock, Pref. (150–02) (Authorized, — — — — — — — — — — — —)				30
31	Capital Stock Installments (150–04)....				31
32	**Total Capital Stock**......	43,193,200			32
33	**Premiums on Capital Stock** (152).....				33
34	Funded Debt (53)........	12,361,000			34
35	Advances from System Corporations f r Constr., etc. (155).................	500,000			35
36	**Total Long Term Debt**.............	12,861,000			36
37	Bills Payable (157)..................	1,420,000			37
38	Accounts Payable (158 to 165).........	577,267			38
39	**Total Working Liabilities**...........	1,997,267			39
40	**Accrued Liabilities Not Due** (166, 167).	255,473			40
41	Unextinguished Premi m on Debt (168).	0			41
42	Insurance and Casualty Reserves (169).	388,269			42
43	Liability for Employees' Be efit Fund (170–01, 170–02)................	1,000,000			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)..........	0			44
45	Other Deferred Credit Items (170-A)...	0			45
46	**Total Deferred Credit Items**.........	1,388,269			46
47	Reserve for Accrued Depreciation (102).	12,078,491			47
48	Reserve for Amortization of Intangible Capital (103)..........				48
49	**Total Fixed Capital Reserves**..... ..	12,078,491			49
50	Undivided Profits, Since Dec. 31, last...	125,067			50
51	Appropriated Surplus (171 to 173)......	0			51
52	Corporate Surplus Unappropriated (174, 137)...........................	3,166,400			52
53	**Total Surplus and Undivided Profits**..	3,291,467			53
54	**Total Liabilities**..................	75,065,167			54

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BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204).........	0			1
2	Right of Way (207)....................	106			2
3	Land and Buildings (211, 212).........	575,232			3
4	Central Office Equipment (221, 222)....	792,066			4
5	Station Equipment (231 to 235)........	613,384			5
6	Exchange Lines (241 to 246)...........	2,798,947			6
7	Toll Lines (251 to 256)................	380,604			7
8	Other Plant (268, 270, 280)............	0			8
9	General Equipment (261 to 265).......	106,279			9
10	Total Fixed Capital................	5,266,618			10
11	Construction Work in Progress (104)....	116,072			11
12	Investment Securities (106 to 109)......	121,525			12
13	Advances to System Corporation for Constr., etc. (110)..................	0			13
14	Miscellaneous Investments (111)......	0			14
15	**Total Permanent and Long Term Investments**......................	5,504,215			15
16	Cash and Deposits (113, 114)..........	555,103			16
17	Marketable Securities (116)............	0			17
18	Bills Receivable (117)................	500,007			18
19	Accounts Receivable (115, 118 to 121, 123)................................	117,919			19
20	Materials and Supplies (122 less 122–10).	20,965			20
21	**Total Working Assets**..........	1,193,994			21
22	**Accrued Income Not Due** (124)......	0			22
23	Sinking Fund Assets (125).............	0			23
24	Prepayments (129 to 133)..............	5,773			24
25	Unamortized Debt Discount and Expense (135)........................				25
26	Other Deferred Debits (126, 127, 136)...				26
27	**Total Deferred Debit Items**..........	5,773			27
28	**Total Assets**.....................	6,703,982			28

MONTHLY REPORT No. 2

PANY B

31, 1921 EXHIBIT B Page 2

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, 5,000,000)	4,000,000			29
30	Capital Stock, Pref. (150–02) (Authorized — — — — — — — — — — —)				30
31	Capital Stock Installments (150–04)....				31
32	**Total Capital Stock**................	4,000,000			32
33	**Premiums on Capital Stock** (152).....	0			33
34	Funded Debt (153)....................	0			34
35	Advances from System Corporations for Constr., etc. (155).................	0			35
36	**Total Long Term Debt**.............	0			36
37	Bills Payable (157)..................	0			37
38	Accounts Payable (158 to 165).........	91,768			38
39	**Total Working Liabilities**...........	91,768			39
40	**Accrued Liabilities Not Due** (166, 167).	103,194			40
41	Unextinguished Premium on Debt (168).				41
42	Insurance and Casualty Reserves (169).				42
43	Liability for Employees' Benefit Fund (170–01, 170–02)..................	100,000			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)..........				44
45	Other Deferred Credit Items (170-A)...				45
46	**Total Deferred Credit Items**.........	100,000			46
47	Reserve for Accrued Depreciation (102).	1,867,689			47
48	Reserve for Amortization of Intangible Capital (103).....................				48
49	**Total Fixed Capital Reserves**........	1,867,689			49
50	Undivided Profits, Since Dec. 31, last...	138,468			50
51	Appropriated Surplus (171 to 173)......				51
52	Corporate Surplus Unappropriated (174, 137)............................	402,863			52
53	**Total Surplus and Undivided Profits**..	541,331			53
54	**Total Liabilities**....................	6,703,982			54

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BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204)	9,358			1
2	Right of Way (207)	1,448,374			2
3	Land and Buildings (211, 212)	1,930,296			3
4	Central Office Equipment (221, 222)	3,247,918			4
5	Station Equipment (231 to 235)	2,027,050			5
6	Exchange Lines (241 to 246)	10,446,933			6
7	Toll Lines (251 to 256)	6,878,665			7
8	Other Plant (268, 270, 280)	201,420			8
9	General Equipment (261 to 265)	304,233			9
10	Total Fixed Capital	26,494,247			10
11	Construction Work in Progress (104)	44,932			11
12	Investment Securities (106 to 109)	14,294,920			12
13	Advances to System Corporation for Constr., etc. (110)	0			13
14	Miscellaneous Investments (111)	149,065			14
15	**Total Permanent and Long Term Investments**	40,983,164			15
16	Cash and Deposits (113, 114)	462,209			16
17	Marketable Securities (116)	13,097			17
18	Bills Receivable (117)	1,685,605			18
19	Accounts Receivable (115, 118 to 121, 123)	565,858			19
20	Materials and Supplies (122 less 122–10)	178,952			20
21	**Total Working Assets**	2,905,721			21
22	**Accrued Income Not Due** (124)	19,360			22
23	Sinking Fund Assets (125)	26,483			23
24	Prepayments (129 to 133)	50,062			24
25	Unamortized Debt Discount and Expense (135)	1,004,653			25
26	Other Deferred Debits (126, 127, 136)	6,634			26
27	**Total Deferred Debit Items**	1,087,832			27
28	**Total Assets**	44,996,077			28

MONTHLY REPORT No. 2

PANY C

31, 1921 EXHIBIT B Page 3

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, 30,000,000)	21,400,000			29
30	Capital Stock, Pref. (150–02) (Authorized, — — — — — — — — — — —)				30
31	Capital Stock Installments (150–04)....				31
32	**Total Capital Stock**................	21,400,000			32
33	**Premiums on Capital Stock** (152).....	0			33
34	Funded Debt (153)..................	17,307,000			34
35	Advances from System Corporations for Constr., etc. (155).................	517,946			35
36	**Total Long Term Debt**.............	17,824,946			36
37	Bills Payable (157)..................	0			37
38	Accounts Payable (158 to 165).........	294,921			38
39	**Total Working Liabilities**...........	294,921			39
40	**Accrued Liabilities Not Due** (166,167).	18,165			40
41	Unextinguished Premium on Debt (168).	0			41
42	Insurance and Casualty Reserves (169).	83,998			42
43	Liability for Employees' Benefit Fund (170–01, 170–02).................	150,000			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)..........	0			44
45	Other Deferred Credit Items (170-A)....	0			45
46	**Total Deferred Credit Items**.........	233,998			46
47	Reserve for Accrued Depreciation (102).	3,037,780			47
48	Reserve for Amortization of Intangible Capital (103)...................	0			48
49	**Total Fixed Capital Reserves**........	3,037,780			49
50	Undivided Profits, Since Dec. 31, last...	293,484			50
51	Appropriated Surplus (171 to 173)......	0			51
52	Corporate Surplus Unappropriated (174, 137)...........................	1,892,783			52
53	**Total Surplus and Undivided Profits**..	2,186,267			53
54	**Total Liabilities**....................	44,996,077			54

Date issued....................19..
Should be issued not later than 20th

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COM-

BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204)	27,371			1
2	Right of Way (207)	628,659			2
3	Land and Buildings (211, 212)	1,193,321			3
4	Central Office Equipment (221, 222)	3,359,714			4
5	Station Equipment (231 to 235)	2,474,359			5
6	Exchange Lines (241 to 246)	17,658,149			6
7	Toll Lines (251 to 256)	7,856,272			7
8	Other Plant (268, 270, 280)	102,728			8
9	General Equipment (261 to 265)	378,303			9
10	Total Fixed Capital	33,678,876			10
11	Construction Work in Progress (104)	251,713			11
12	Investment Securities (106 to 109)	726,145			12
13	Advances to System Corporation for Constr., etc. (110)	0			13
14	Miscellaneous Investments (111)	266,791			14
15	**Total Permanent and Long Term Investments**	34,923,525			15
16	Cash and Deposits (113, 114)	446,550			16
17	Marketable Securities (116)	68,503			17
18	Bills Receivable (117)	1,210,627			18
19	Accounts Receivable (115, 118 to 121, 123)	954,717			19
20	Materials and Supplies (122 less 122–10)	367,494			20
21	**Total Working Assets**	3,047,891			21
22	**Accrued Income Not Due** (124)	5,106			22
23	Sinking Fund Assets (125)	190,896			23
24	Prepayments (129 to 133)	36,856			24
25	Unamortized Debt Discount and Expense (135)	26,311			25
26	Other Deferred Debits (126, 127, 136)	7,673			26
27	**Total Deferred Debit Items**	261,736			27
28	**Total Assets**	38,238,258			28

MONTHLY REPORT No. 2

PANY D

31, 1921 **EXHIBIT B Page 4**

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, — — — — — — — — — — — —)	11,080,650			29
30	Capital Stock, Pref. (150–02) (Authorized, — — — — — — — — — — — —)				30
31	Capital Stock Installments (150–04)				31
32	**Total Capital Stock**	11,080,650			32
33	**Premiums on Capital Stock** (152).....				33
34	Funded Debt (153)....................	21,925,000			34
35	Advances from System Corporations for Constr., etc. (155)..................				35
36	**Total Long Term Debt**	21,925,000			36
37	Bills Payable (157)...................	0			37
38	Accounts Payable (158 to 165).........	420,593			38
39	**Total Working Liabilities**.....	420,593			39
40	**Accrued Liabilities Not Due** (166, 167).	30,785			40
41	Unextinguished Premium on Debt (168).	0			41
42	Insurance and Casualty Reserves (169).	52,805			42
43	Liability for Employees' Benefit Fund (170–01, 170–02).................	160,000			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)..........	0			44
45	Other Deferred Credit Items (170-A)....	0			45
46	**Total Deferred Credit Items**.........	212,805			46
47	Reserve for Accrued Depreciation (102).	3,933,989			47
48	Reserve for Amortization of Intangible Capital (103).....................				48
49	**Total Fixed Capital Reserves**........	3,933,989			49
50	Undivided Profits, Since Dec. 31, last..	213,374			50
51	Appropriated Surplus (171 to 173)......				51
52	Corporate Surplus Unappropriated (174, 137)...........................	421,062			52
53	**Total Surplus and Undivided Profits**..	634,436			53
54	**Total Liabilities**..................	38,238,258			54

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COM-

BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204)	2,915,469			1
2	Right of Way (207)	2,869,040			2
3	Land and Buildings (211, 212)	23,846,468			3
4	Central Office Equipment (221, 222)	27,787,523			4
5	Station Equipment (231 to 235)	24,531,135			5
6	Exchange Lines (241 to 246)	85,909,193			6
7	Toll Lines (251 to 256)	20,912,354			7
8	Other Plant (268, 270, 280)	27,210			8
9	General Equipment (261 to 265)	1,913,578			9
10	Total Fixed Capital	190,711,970			10
11	Construction Work in Progress (104)	1,904,323			11
12	Investment Securities (106 to 109)	70,689,880			12
13	Advances to System Corporation for Constr., etc. (110)	5,489,119			13
14	Miscellaneous Investments (111)	480,582			14
15	**Total Permanent and Long Term Investments**	269,275,874			15
16	Cash and Deposits (113, 114)	2,708,272			16
17	Marketable Securities (116)	0			17
18	Bills Receivable (117)	3,209			18
19	Accounts Receivable (115, 118 to 121, 123)	4,167,102			19
20	Materials and Supplies (122 less 122–10)	2,630,333			20
21	**Total Working Assets**	9,508,916			21
22	**Accrued Income Not Due** (124)	1,433,334			22
23	Sinking Fund Assets (125)	93,599			23
24	Prepayments (129 to 133)	616,833			24
25	Unamortized Debt Discount and Expense (135)	0			25
26	Other Deferred Debits (126, 127, 136)	117,887			26
27	**Total Deferred Debit Items**	828,319			27
28	**Total Assets**	281,046,443			28

MONTHLY REPORT No. 2

PANY E

31, 1921 EXHIBIT B Page 5

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, 150,000,000)	125,000,000			29
30	Capital Stock, Pref. (150–02) (Authorized, — — — — — — — — — — —)				30
31	Capital Stock Installments (150–04)				31
32	**Total Capital Stock**	125,000,000			32
33	**Premiums on Capital Stock** (152)				33
34	Funded Debt (153)	73,058,150			34
35	Advances from System Corporations for Constr., etc. (155)	2,500,000			35
36	**Total Long Term Debt**	75,558,150			36
37	Bills Payable (157)	2,500,000			37
38	Accounts Payable (158 to 165)	4,037,662			38
39	**Total Working Liabilities**	6,537,662			39
40	**Accrued Liabilities Not Due** (166, 167) .	1,582,609			40
41	Unextinguished Premium on Debt (168) .				41
42	Insurance and Casualty Reserves (169) .	56			42
43	Liability for Employees' Benefit Fund (170–01, 170–02)	2,052,500			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)				44
45	Other Deferred Credit Items (170–A)	139,797			45
46	**Total Deferred Credit Items**	2,192,353			46
47	Reserve for Accrued Depreciation (102) .	38,339,234			47
48	Reserve for Amortization of Intangible Capital (103)	536,935			48
49	**Total Fixed Capital Reserves**	38,876,169			49
50	Undivided Profits, Since Dec. 31, last ...	7,303,589			50
51	Appropriated Surplus (171 to 173)	3,997,953			51
52	Corporate Surplus Unappropriated (174, 137)	19,997,958			52
53	**Total Surplus and Undivided Profits** ..	31,299,500			53
54	**Total Liabilities**	281,046,443			54

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COM-

BALANCE SHEET, December

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	ASSETS				
1	Intangible Capital (201 to 204)	11,550			1
2	Right of Way (207)	1,165,719			2
3	Land and Buildings (211, 212)	7,367,809			3
4	Central Office Equipment (221, 222)	9,677,861			4
5	Station Equipment (231 to 235)	8,352,960			5
6	Exchange Lines (241 to 246)	35,618,044			6
7	Toll Lines (251 to 256)	8,377,221			7
8	Other Plant (268, 270, 280)	0			8
9	General Equipment (261 to 265)	1,038,228			9
10	Total Fixed Capital	71,609,392			10
11	Construction Work in Progress (104)	2,353,769			11
12	Investment Securities (106 to 109)	10,022,923			12
13	Advances to System Corporation for Constr., etc. (110)	11,875,000			13
14	Miscellaneous Investments (111)	332,384			14
15	**Total Permanent and Long Term Investments**	96,193,468			15
16	Cash and Deposits (113, 114)	1,223,157			16
17	Marketable Securities (116)				17
18	Bills Receivable (117)	67,500			18
19	Accounts Receivable (115, 118 to 121, 123)	4,776,924			19
20	Materials and Supplies (122 less 122–10)	1,432,680			20
21	**Total Working Assets**	7,500,261			21
22	**Accrued Income Not Due** (124)	130,178			22
23	Sinking Fund Assets (125)	264,801			23
24	Prepayments (129 to 133)	209,208			24
25	Unamortized Debt Discount and Expense (135)	369,859			25
26	Other Deferred Debits (126, 127, 136)	958			26
27	**Total Deferred Debit Items**	844,826			27
28	**Total Assets**	104,668,733			28

MONTHLY REPORT No. 2

PANY F

31, 1921 EXHIBIT B Page 6

		a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	
	LIABILITIES				
29	Capital Stock, Com. (150–01) (Authorized, 70,000,000)	60,000,000			29
30	Capital Stock, Pref. (150–02) (Authorized, — — — — — — — — — — —)				30
31	Capital Stock Installments (150–04)....				31
32	**Total Capital Stock**................	60,000,000			32
33	**Premiums on Capital Stock** (152).....				33
34	Funded Debt (153)...................	9,950,750			34
35	Advances from System Corporations for Constr., etc. (155).......	4,534,499			35
36	**Total Long Term Debt**.............	14,485,249			36
37	Bills Payable (157)..................				37
38	Accounts Payable (158 to 165).........	1,547,791			38
39	**Total Working Liabilities**...........	1,547,791			39
40	**Accrued Liabilities Not Due** (166,167).	1,887,430			40
41	Unextinguished Premium on Debt (168).				41
42	Insurance and Casualty Reserves (169).	26,595			42
43	Liability for Employees' Benefit Fund (170–01, 170–02)..................	722,500			43
44	Liability on Account of other Provident Funds (170 less 01 and 02)..........				44
45	Other Deferred Credit Items (170-A)....	236,353			45
46	**Total Deferred Credit Items**.........	985,448			46
47	Reserve for Accrued Depreciation (102).	13,178,248			47
48	Reserve for Amortization of Intangible Capital (103)....................	218,775			48
49	**Total Fixed Capital Reserves**........	13,397,023			49
50	Undivided Profits, Since Dec. 31, last...	1,754,243			50
51	Appropriated Surplus (171 to 173)......	1,000,000			51
52	Corporate Surplus Unappropriated (174, 137).........................	9,611,549			52
53	**Total Surplus and Undivided Profits**..	12,365,792			53
54	**Total Liabilities**..................	104,668,733			54

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FIXED CAPITAL, December 31, 1921
EXHIBIT C

	Intangible Capital	Right of Way	Land and Buildings	C. O. Equipment	Station Equipment	Exchange Lines	Toll Lines	Other Plant	General Equipment	Total Fixed Capital
	1	2	3	4	5	6	7	8	9	10
Company A	0	1,318,717	5,905,722	8,438,330	7,493,193	29,251,700	13,206,156	607,202	1,034,905	67,255,925
Company B	0	106	575,232	792,066	613,384	2,798,947	380,604	0	106,279	5,266,618
Company C	9,358	1,448,374	1,930,296	3,247,918	2,027,050	10,446,933	6,878,665	201,420	304,233	26,494,247
Company D	27,371	628,659	1,193,321	3,359,714	2,474,359	17,658,149	7,856,272	102,728	378,303	33,678,876
Company E	2,915,469	2,869,040	23,846,468	27,787,523	24,531,135	85,909,193	20,912,354	27,210	1,913,578	190,711,970
Company F	11,550	1,165,719	7,367,809	9,677,861	8,352,960	35,618,044	8,377,221	0	1,038,228	71,609,392
Total	2,963,748	7,430,615	40,818,848	53,303,412	45,492,081	181,682,966	57,611,272	938,560	4,775,526	395,017,028
Duplications										
	2,963,748	7,430,615	40,818,848	53,303,412	45,492,081	181,682,966	57,611,272	938,560	4,775,526	395,017,028

INVESTMENTS, December 31, 1921 — WORKING ASSETS, December 31, 1921

EXHIBIT C Page 2

	Const. Work in Progress	Investment Securities	Advances to Syst. Corp.	Miscellaneous Investments	Total Long Term Investments	Cash and Deposits	Marketable Securities	Bills Receivable	Accounts Receivables	Materials and Supplies	Total Working Assets
	11	12	13	14	15	16	17	18	19	20	21
Company A..	0	4,221,132	367,221	0	71,844,278	663,549	451	17,386	2,187,470	228,432	3,097,288
Company B..	116,072	121,525	0	0	5,504,215	555,103	0	500,007	117,919	20,965	1,193,994
Company C..	44,932	14,294,920	0	149,065	40,983,164	462,209	13,097	1,685,605	565,858	178,952	2,905,721
Company D..	251,713	726,145	0	266,791	34,923,525	446,550	68,503	1,210,627	954,717	367,494	3,047,891
Company E..	1,904,323	70,589,880	5,489,119	480,582	269,275,874	2,708,272	0	3,209	4,167,102	2,630,333	9,508,916
Company F..	2,353,769	10,022,923	11,875,000	332,384	96,193,468	1,223,157	0	67,500	4,776,924	1,432,680	7,500,261
Total...	4,670,809	100,076,525	17,731,340	1,228,822	518,724,524	6,058,840	82,051	3,484,334	12,769,990	4,858,856	27,254,071
Duplications.		*80,950,794*	*4,534,499*		*85,485,293*			*500,000*	*29,764*		*529,754*
	4,670,809	19,125,731	13,196,841	1,228,822	433,239,231	6,058,840	82,051	2,984,334	12,740,226	4,858,856	26,724,307

DEFERRED DEBITS, December 31, 1921
EXHIBIT C Page 3

	Accrued Income not due	Sinking Fund Assets	Repayments	Unamortized D. D. and Ex.	Other Deferred Debits	Total Deferred Debits	Total Assets
	22	23	24	25	26	27	28
Company A	26,429	0	97,172	0	0	97,172	75,065,167
Company B	0	0	5,773	0	0	5,773	6,703,982
Company C	19,360	26,483	50,062	1,004,653	6,634	1,087,832	44,996,077
Company D	5,106	190,896	36,856	26,311	7,673	261,736	38,238,258
Company E	1,433,334	93,599	616,833	0	117,887	828,319	281,046,443
Company F	130,178	264,801	209,208	369,859	958	844,826	104,668,733
Total	1,614,407	575,779	1,015,904	1,400,823	133,152	3,125,658	550,718,660
Duplications	*924,259*	*190,000*		*170,000*		*360,000*	*87,299,316*
	690,148	385,779	1,015,904	1,230,823	133,152	2,765,658	463,419,344

STOCKS AND BONDS, December 31, 1921
EXHIBIT C Page 4

	Capital Stock Com.	Capital Stock Pref.	Capital Stock Instl.	Total Cap. Stock	Premiums on Capital Stock	Funded Debt	Advances from Syst. Corporations	Total Long Term Debt
	29	30	31	32	33	34	35	36
Company A....	43,193,200			43,193,200	0	12,361,000	500,000	12,861,000
Company B....	4,000,000			4,000,000	0	0	0	0
Company C....	21,400,000			21,400,000	0	17,307,000	517,946	17,824,946
Company D....	11,080,650			11,080,650	0	21,925,000	0	21,925,000
Company E....	125,000,000			125,000,000	0	73,058,150	2,500,000	75,558,150
Company F.....	60,000,000			60,000,000	0	9,950,750	4,534,499	14,485,249
Total......	264,673,850			264,673,850	0	134,601,900	8,052,445	142,654,345
Duplications....	*72,241,700*			*72,241,700*		*5,885,000*	*4,534,499*	*10,419,499*
	192,432,150			192,432,150	0	128,716,900	3,517,946	132,234,846

SHORT TERM DEBT AND ACCRUED LIABILITIES, December 31, 1921
EXHIBIT C Page 5

	Bills Payable	Accounts Payable	Total Working Liabilities	Accrued Liabilities not due	Unext. Prem. on Debt	Insurance and Casualty Res.	Liability for Emp. B. F.	Liability Account Other Res. F'ds	Other Def. Cr. Items	Total Def. Cr. Items
	37	38	39	40	41	42	43	44	45	46
Company A.....	1,420,000	577,267	1,997,267	255,473	0	388,269	1,000,000	0	0	1,388,269
Company B.....	0	91,768	91,768	103,194	0	0	100,000	0	0	100,000
Company C.....	0	294,921	294,921	18,165	0	83,998	150,000	0	0	233,998
Company D.....	0	420,593	420,593	30,785	0	52,805	160,000	0	0	212,805
Company E.....	2,500,000	4,037,662	6,537,662	1,582,609	0	56	2,052,500	0	139,797	2,192,353
Company F.....	0	1,547,791	1,547,791	1,887,430	0	26,595	722,500	0	236,353	985,448
Total.......	3,920,000	6,970,002	10,890,002	3,877,656	0	551,723	4,185,000	0	376,150	5,112,873
Duplications.....	*500,000*	*29,686*	*529,686*	*924,259*						
	3,420,000	6,940,316	10,360,316	2,953,397	0	551,723	4,185,000	0	376,150	5,112,873

RESERVES AND SURPLUS, December 31, 1921
EXHIBIT C Page 6

	Res. for Depreciation	Res. for Amount of Int. Cap.	Total Fix. Cap. Res.	Undivided Profits	Approp. Surplus	Corp. Surplus Unappropriated	Total Surplus and Undivided Prof.	Total Liabilities
	47	48	49	50	51	52	53	54
Company A	12,078,491	0	12,078,491	125,067	0	3,166,400	3,291,467	75,065,167
Company B	1,867,689	0	1,867,689	138,468	0	402,863	541,331	6,703,982
Company C	3,037,780	0	3,037,780	293,484	0	1,892,783	2,186,267	44,996,077
Company D	3,933,989	0	3,933,989	213,374	0	421,062	634,436	38,238,258
Company E	38,339,234	536,935	38,876,169	7,303,589	3,997,953	19,997,958	31,299,500	281,046,443
Company F	13,178,248	218,775	13,397,023	1,754,243	1,000,000	9,611,549	12,365,792	104,668,733
Total	72,435,431	755,710	73,191,141	9,828,225	4,997,953	35,492,615	50,318,793	550,718,660
Duplications						*3,184,172*	*3,184,172*	*87,299,316*
	72,435,431	755,710	73,191,141	9,828,225	4,997,953	32,308,443	47,134,621	463,419,344

COMBINED TELEPHONE OPERATING COMPANIES A TO F DUPLICATIONS, December 31, 1921 EXHIBIT D

	Book Value Assets	Par Value Liabilities	* Adjustments	Work Sheet Reference Line Nos.
Stocks:				
Co. B, held by Co. A....	$ 2,584,652	$ 1,318,700	*$1,265,952*	
Co. D, " " " C....	12,982,392	11,064,000	*1,918,392*	
Co. F, " " " E....	59,864,750	59,859,000	*5,750*	
		72,241,700		29
Bonds:				
Co. F, held by Co. E....	5,001,000	5,171,000		
Co. C, " " " D....	518,000	518,000		
	80,950,794			12
Sinking Fund Assets:......				
Co. C, held by Co. D....	190,000	196,000	6,000	23
Unamortized D. D. and E.:				
Co. F, held by Co. E....	170,000			25
		5,885,000		34
	$81,310,794	$78,126,700	*$3,184,094*	
Advances:				
Co. E, to Co. F.........	4,534,499	4,534,499		13 x 35
Bills:				
Co. B, from Co. A......	500,000	500,000		18 x 37
Accounts:				
Co. B, from Co. A......	94			
Co. D, " " C......	26,412			
Co. E, " " F......	3,258			
Co. A, to " B......		13		
Co. C, " " D......		26,412		
Co. F, " " E......		3,261		
	29,764	29,686	*78*	19 x 38
Accrued Income and Liability:				
Co. A, from Co. B......	26,374	26,374		
Co. E, " " F.......	897,885	897,885		
	924,259	924,259		22 x 40
Total.............	$87,299,316	$84,115,144	*$3,184,172*	28–52 x 54

* Adjustments are made through Corporate Surplus Unappropriated, Line 52. If the book value of the Asset Account eliminated is greater than the par value of the corresponding liability, the difference is deducted from surplus, if less, the difference is added to surplus.

INCOME STATEMENT

Exhibit A—Consolidated Income Statement.

" **B**—Income Statements for year 1921 of six companies individually designated as Company A, B, C, D, E, and F.

" **C**—Work Sheets containing in the aggregate 49 columns with headings corresponding to those shown on the 49 lines of the Income Statement.

The figures for each company have been transferred from the Income Statements to these Work Sheets, totaled, and the intercompany duplications (red figures; here italics) excluded.

The total of each column has been transferred to the Consolidated Income Statements, Exhibit A.

" **D**—List of duplications showing intercompany receipts and payments of interest, dividends, etc.

This Copy for

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MONTHLY REPORT No. 3

COMBINED TELEPHONE OPERATING COMPANIES A TO F

INCOME STATEMENT, For Month of December, 1921 EXHIBIT A

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper. Revenues (300) (See Report 4)			110,560,178		1
2	Tel. Oper. Expenses (301) (See Report 5)			73,699,975		2
3	Net Telephone Operating Revenues			36,860,203		3
4	Other Operating Revenues (302)			13,248		4
5	Other Operating Expenses (303)			12,502		5
6	Net Other Operating Revenues			746		6
7	**Total Net Operating Revenues**			36,860,949		7
8	Uncollectible Operating Revenues (304)			772,229		8
9	Taxes Assignable to Operations (305)			6,227,807		9
10	**Total Deduct's from Oper. Revenues**			7,000,036		10
11	**TOTAL OPERATING INCOME**			29,860,913		11
12	Rent Rev's from Lease of Tel. Plant (310)			6,652		12
13	Miscellaneous Rent Revenues (311)			501,276		13
14	Dividend Revenues (312)			1,206,952		14
15	Interest Earned (313–01)			1,238,650		15
16	Interest Charged Construction (313–02)			21,798		16
17	Sinking and Other Res. Fund Accret'ns (314)			12,218		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			34,655		19
20	**Total Non-Operating Revenues**			3,022,201		20
21	Rent Expense (320)			211,331		21
22	Misc. Non-Operating Expense (321)			13,287		22

23	Non-Operating Taxes (322)			158,631		23
24	Uncollectible Non-Oper. Rev's (323)			7,480		24
25	**Total Non-Ope : Revenue Deductions**			390,729		25
26	**NET NON-OPERATING REVENUES**			2,631,472		26
27	**TOTAL GROSS INCOME**			32,492,385		27
28	Rent Deduct's for Lease of Tel. Plant (330)			16,500		28
29	Rent Deduct's for Telephone Offices (331)			144,528		29
30	Rent Deduct's for C. P. and Other Sups. (332)			1,448,827		30
31	Rent Deduct's for Instr's and Equip't (333)			1,753		31
32	Miscellaneous Rent Deductions (334)			90,462		32
33	Total Rent Deductions			1,702,070		33
34	Interest Deduct's for Funded Debt (335)			6,101,085		34
35	Other Interest Deductions (336)			41,129		35
36	Amort. of Debt Disc. and Expense (338)			49,785		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			6,191,999		38
39	Loss on Operations of Others (337)			236		39
40	Amortization of Landed Capital (340)			188,553		40
41	Misc. Deductions from Income (341)			47,436		41
42	Total Miscellaneous Deductions			236,225		42
43	**Total Deductions from Gross Income**			8,130,294		43
44	**BALANCE NET INCOME**			24,362,091		44
45	Approp. Sinking and Other Res. Funds (250)			0		45
46	Dividend Approp. of Income (351)			14,529,846		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			4,020		48
49	**BALANCE FOR CORPORATE SURPLUS**			9,828,225		49

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MONTHLY REPORT No. 3

COMPANY A

INCOME STATEMENT, For Month of December, 1921 EXHIBIT B

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper. Revenues (300) (See Report 4)			17,583,879		1
2	Tel. Oper. Expenses (301) (See Report 5)			12,781,720		2
3	Net Telephone Operating Revenues			4,802,159		3
4	Other Operating Revenues (302)			0		4
5	Other Operating Expenses (303)			0		5
6	Net Other Operating Revenues			0		6
7	**Total Net Operating Revenues**			4,802,159		7
8	Uncollectible Operating Revenues (304)			133,889		8
9	Taxes Assignable to Operations (305)			960,033		9
10	**Total Deduct's from Oper. Revenues**			1,093,922		10
11	**TOTAL OPERATING INCOME**			3,708,237		11
12	Rent Rev's from Lease of Tel. Plant (310)			6,092		12
13	Miscellaneous Rent Revenues (311)			65,796		13
14	Dividend Revenues (312)			179,933		14
15	Interest Earned (313–01)			54,035		15
16	Interest Charged Construction (313 02)			0		16
17	Sinking and Other Res. Fund Accret'ns (314)			0		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			3,148		19
20	**Total Non-Operating Revenues**			309,004		20
21	Rent Expense (320)			25,709		21
22	Misc. Non-Operating Expense (321)			0		22

23	Non-Operating Taxes (322)			0		23
24	Uncollectible Non-Oper. Rev's (323)			0		24
25	**Total Non-Oper. Revenue Deductions**			25,709		25
26	**NET NON-OPERATING REVENUES**			283,295		26
27	**TOTAL GROSS INCOME**			3,991,532		27
28	Rent Deduct's for Lease of Tel. Plant (330)			0		28
29	Rent Deduct's for Telephone Offices (331)			90,283		29
30	Rent Deduct's for C. P. and Other Sups. (332)			76,982		30
31	Rent Deduct's for Instr's and Equip't (333)			23		31
32	Miscellaneous Rent Deductions (334)			24,781		32
33	Total Rent Deductions			192,069		33
34	Interest Deduct's for Funded Debt (335)			608,869		34
35	Other Interest Deductions (336)			39,647		35
36	Amort. of Debt Disc. and Expense (338)			0		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			648,516		38
39	Loss on Operations of Others (337)			236		39
40	Amortization of Landed Capital (340)			0		40
41	Misc. Deductions from Income (341)			0		41
42	Total Miscellaneous Deductions			236		42
43	**Total Deductions from Gross Income**			840,821		43
44	**BALANCE NET INCOME**			3,150,711		44
45	Approp. Sinking and Other Res. Funds (350)			0		45
46	Dividend Approp. of Income (351)			3,021,624		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			4,020		48
49	**BALANCE FOR CORPORATE SURPLUS**			125,067		49

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MONTHLY REPORT No. 3

COMPANY B

INCOME STATEMENT, For Month of December, 1921 EXHIBIT B Page 2

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper. Revenues (300) (See Report 4)			1,730,258		1
2	Tel. Oper. Expenses (301) (See Report 5)			1,206,127		2
3	Net Telephone Operating Revenues			524,131		3
4	Other Operating Revenues (302)			0		4
5	Other Operating Expenses (303)			0		5
6	Net Other Operating Revenues			0		6
7	**Total Net Operating Revenues**			524,131		7
8	Uncollectible Operating Revenues (304)			18,000		8
9	Taxes Assignable to Operations (305)			81,813		9
10	**Total Deduct's from Oper. Revenues**			99,813		10
11	**TOTAL OPERATING INCOME**			424,318		11
12	Rent Rev's from Lease of Tel. Plant (310)			0		12
13	Miscellaneous Rent Revenues (311)			0		13
14	Dividend Revenues (312)			10,922		14
15	Interest Earned (313 01)			41,396		15
16	Interest Charged Construction (313–02)			0		16
17	Sinking and Other Res. Fund Accret'ns (314)			0		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			0		19
20	**Total Non-Operating Revenues**			52,318		20
21	Rent Expense (320)			0		21
22	Misc. Non-Operating Expense (321)			0		22

23	Non-Operating Taxes (322)			0		23
24	Uncollectible Non-Oper. Rev's (323)			0		24
25	Total Non-Oper. Revenue Deductions			0		25
26	NET NON-OPERATING REVENUES			52,318		26
27	TOTAL GROSS INCOME			476,636		27
28	Rent Deduct's for Lease of Tel. Plant (330)			0		28
29	Rent Deduct's for Telephone Offices (331)			5,591		29
30	Rent Deduct's for C. P. and Other Sups. (332)			9,341		30
31	Rent Deduct's for Instr's and Equip't (333)			2,350		31
32	Miscellaneous Rent Deductions (334)			0		32
33	Total Rent Deductions			17,282		33
34	Interest Deduct's for Funded Debt (335)			0		34
35	Other Interest Deductions (336)			886		35
36	Amort. of Debt Disc. and Expense (338)			0		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			886		38
39	Loss on Operations of Others (337)			0		39
40	Amortization of Landed Capital (340)			0		40
41	Misc. Deductions from Income (341)			0		41
42	Total Miscellaneous Deductions			0		42
43	Total Deductions from Gross Income			18,168		43
44	BALANCE NET INCOME			458,468		44
45	Approp. Sinking and Other Res. Funds (350)			0		45
46	Dividend Approp. of Income (351)			320,000		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			0		48
49	BALANCE FOR CORPORATE SURPLUS			138,468		49

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MONTHLY REPORT No. 3

COMPANY C

INCOME STATEMENT, For Month of December, 1921 EXHIBIT B Page 3

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper. Revenues (300) (See Report 4)			6,712,745		1
2	Tel. Oper. Expenses (301) (See Report 5)			4,493,106		2
3	Net Telephone Operating Revenues			2,219,639		3
4	Other Operating Revenues (302)			0		4
5	Other Operating Expenses (303)			0		5
6	Net Other Operating Revenues			0		6
7	**Total Net Operating Revenues**			2,219,639		7
8	Uncollectible Operating Revenues (304)			82,500		8
9	Taxes Assignable to Operations (305)			384,069		9
10	**Total Deduct's from Oper. Revenues**			466,569		10
11	**TOTAL OPERATING INCOME**			1,753,070		11
12	Rent Rev's from Lease of Tel. Plant (310)			0		12
13	Miscellaneous Rent Revenues (311)			14,247		13
14	Dividend Revenues (312)			727,287		14
15	Interest Earned (313–01)			114,638		15
16	Interest Charged Construction (313–02)			8,566		16
17	Sinking and Other Res. Fund Accret'ns (314)			18		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			3,314		19
20	**Total Non-Operating Revenues**			868,070		20
21	Rent Expense (320)			24		21
22	Misc. Non-Operating Expense (321)			2		22

23	Non-Operating Taxes (322)			1,054		23
24	Uncollectible Non-Oper. Rev's (323)			234		24
25	**Total Non-Oper. Revenue Deductions**			1,314		25
26	**NET NON-OPERATING REVENUES**			866,756		26
27	**TOTAL GROSS INCOME**			2,619,826		27
28	Rent Deduct's for Lease of Tel. Plant (330)			0		28
29	Rent Deduct's for Telephone Offices (331)			47,130		29
30	Rent Deduct's for C. P. and Other Sups. (332)			48,378		30
31	Rent Deduct's for Instr's and Equip't (333)			1		31
32	Miscellaneous Rent Deductions (334)			29,256		32
33	Total Rent Deductions			124,765		33
34	Interest Deduct's for Funded Debt (335)			872,515		34
35	Other Interest Deductions (336)			922		35
36	Amort. of Debt Disc. and Expense (338)			40,463		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			913,900		38
39	Loss on Operations of Others (337)			0		39
40	Amortization of Landed Capital (340)			0		40
41	Misc. Deductions from Income (341)			3,677		41
42	Total Miscellaneous Deductions			3,677		42
43	**Total Deductions from Gross Income**			1,042,342		43
44	**BALANCE NET INCOME**			1,577,484		44
45	Approp. Sinking and Other Res. Funds (350)			0		45
46	Dividend Approp. of Income (351)			1,284,000		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			0		48
49	**BALANCE FOR CORPORATE SURPLUS**			293,484		49

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MONTHLY REPORT No. 3

COMPANY D

INCOME STATEMENT, For Month of December, 1921 EXHIBIT B Page 4

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper Revenues (300) (See Report 4)			8,173,249		1
2	Tel. Oper. Expenses (301) (See Report 5)			5,472,141		2
3	Net Telephone Operating Revenues			2,701,108		3
4	Other Operating Revenues (302)			0		4
5	Other Operating Expenses (303)			0		5
6	Net Other Operating Revenues			0		6
7	**Total Net Operating Revenues**			2,701,108		7
8	Uncollectible Operating Revenues (304)			104,813		8
9	Taxes Assignable to Operations (305)			549,431		9
10	**Total Deduct's from Oper. Revenues**			654,244		10
11	**TOTAL OPERATING INCOME**			2,046,864		11
12	Rent Rev's from Lease of Tel. Plant (310)			0		12
13	Miscellaneous Rent Revenues (311)			8,556		13
14	Dividend Revenues (312)			11,742		14
15	Interest Earned (313–01)			94,061		15
16	Interest Charged Construction (313–02)			13,232		16
17	Sinking and Other Res. Fund Accret'ns (314)			9,139		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			3,999		19
20	**Total Non-Operating Revenues**			140,729		20
21	Rent Expense (320)			356		21
22	Misc. Non-Operating Expense (321)			722		22

23	Non-Operating Taxes (322)			3,835		23
24	Uncollectible Non-Oper. Rev's (323)			239		24
25	**Total Non-Oper. Revenue Deductions**			5,152		25
26	**NET NON-OPERATING REVENUES**			135,577		26
27	**TOTAL GROSS INCOME**			2,182,441		27
28	Rent Deduct's for Lease of Tel. Plant (330)			0		28
29	Rent Deduct's for Telephone Offices (331)			87,896		29
30	Rent Deduct's for C. P. and Other Sups. (332)			37,088		30
31	Rent Deduct's for Instr's and Equip't (333)			123		31
32	Miscellaneous Rent Deductions (334)			20,007		32
33	Total Rent Deductions			145,114		33
34	Interest Deduct's for Funded Debt (335)			1,149,225		34
35	Other Interest Deductions (336)			4,613		35
36	Amort. of Debt Disc. and Expense (338)			1,249		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			1,155,087		38
39	Loss on Operations of Others (337)			0		39
40	Amortization of Landed Capital (340)			0		40
41	Misc. Deductions from Income (341)			4,057		41
42	Total Miscellaneous Deductions			4,057		42
43	**Total Deductions from Gross Income**			1,304,258		43
44	**BALANCE NET INCOME**			878,183		44
45	Approp. Sinking and Other Res. Funds (350)			0		45
46	Dividend Approp. of Income (351)			664,809		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			0		48
49	**BALANCE FOR CORPORATE SURPLUS**			213,374		49

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MONTHLY REPORT No. 3

COMPANY E

INCOME STATEMENT, For Month of December, 1921 EXHIBIT B Page 5

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper. Revenues (300) (See Report 4)			56,532,966		1
2	Tel. Oper. Expenses (301) (See Report 5)			35,283,309		2
3	Net Telephone Operating Revenues			21,249,657		3
4	Other Operating Revenues (302)			13,248		4
5	Other Operating Expenses (303)			12,502		5
6	Net Other Operating Revenues			746		6
7	**Total Net Operating Revenues**			21,250,403		7
8	Uncollectible Operating Revenues (304)			298,127		8
9	Taxes Assignable to Operations (305)			3,493,356		9
10	**Total Deduct's from Oper. Revenues**			3,791,483		10
11	**TOTAL OPERATING INCOME**			17,458,920		11
12	Rent Rev's from Lease of Tel. Plant (310)			410		12
13	Miscellaneous Rent Revenues (311)			454,277		13
14	Dividend Revenues (312)			4,157,672		14
15	Interest Earned (313–01)			756,404		15
16	Interest Charged Construction (313 02)			0		16
17	Sinking and Other Res. Fund Accret'ns (314)			1,641		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			16,455		19
20	**Total Non-Operating Revenues**			5,386,859		20
21	Rent Expense (320)			171,803		21
22	Misc. Non-Operating Expense (321)			8,644		22

23	Non-Operating Taxes (322)			79,716		23
24	Uncollectible Non-Oper. Rev's (323)			6,235		24
25	**Total Non-Oper. Revenue Deductions**			266,398		25
26	**NET NON-OPERATING REVENUES**			5,120,461		26
27	**TOTAL GROSS INCOME**			22,579,381		27
28	Rent Deduct's for Lease of Tel. Plant (330)			16,500		28
29	Rent Deduct's for Telephone Offices (331)			242,711		29
30	Rent Deduct's for C. P. and Other Sups. (332)			1,498,893		30
31	Rent Deduct's for Instr's and Equip't (333)			1,464		31
32	Miscellaneous Rent Deductions (334)			18,043		32
33	Total Rent Deductions			1,777,611		33
34	Interest Deduct's for Funded Debt (335)			3,320,604		34
35	Other Interest Deductions (336)			25,061		35
36	Amort. of Debt Disc. and Expense (338)			0		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			3,345,665		38
39	Loss on Operations of Others (337)			0		39
40	Amortization of Landed Capital (340)			139,001		40
41	Misc. Deductions from Income (341)			13,515		41
42	Total Miscellaneous Deductions			152,516		42
43	**Total Deductions from Gross Income**			5,275,792		43
44	**BALANCE NET INCOME**			17,303,589		44
45	Approp. Sinking and Other Res. Funds (350)			0		45
46	Dividend Approp. of Income (351)			10,000,000		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			0		48
49	**BALANCE FOR CORPORATE SURPLUS**			7,303,589		49

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General Auditor

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Mr. . . . .

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MONTHLY REPORT No. 3

COMPANY F

INCOME STATEMENT, For Month of December, 1921 EXHIBIT B Page 6

		a This Month	b Increase over last Month	c 12 Months this year	d Increase over same period last year	
1	Tel. Oper. Revenues (300) (See Report 4)			20,593,011		1
2	Tel. Oper. Expenses (301) (See Report 5)			14,463,572		2
3	Net Telephone Operating Revenues			6,129,439		3
4	Other Operating Revenues (302)			0		4
5	Other Operating Expenses (303)			0		5
6	Net Other Operating Revenues			0		6
7	**Total Net Operating Revenues**			6,129,439		7
8	Uncollectible Operating Revenues (304)			134,900		8
9	Taxes Assignable to Operations (305)			759,105		9
10	**Total Deduct's from Oper. Revenues**			894,005		10
11	**TOTAL OPERATING INCOME**			5,235,434		11
12	Rent Rev's from Lease of Tel. Plant (310)			150		12
13	Miscellaneous Rent Revenues (311)			43,505		13
14	Dividend Revenues (312)			480,072		14
15	Interest Earned (313–01)			664,180		15
16	Interest Charged Construction (313–02)			0		16
17	Sinking and Other Res. Fund Accret'ns (314)			9,853		17
18	Profits from Operations of Others (315)			0		18
19	Misc. Non-Operating Revenues (316)			7,739		19
20	**Total Non-Operating Revenues**			1,205,499		20
21	Rent Expense (320)			13,439		21
22	Misc. Non-Operating Expense (321)			3,919		22

23	Non-Operating Taxes (322)			74,026		23
24	Uncollectible Non-Oper. Rev's (323)			772		24
25	**Total Non-Oper. Revenue Deductions**			92,156		25
26	**NET NON-OPERATING REVENUES**			1,113,343		26
27	**TOTAL GROSS INCOME**			6,348,777		27
28	Rent Deduct's for Lease of Tel. Plant (330)			0		28
29	Rent Deduct's for Telephone Offices (331)			138,821		29
30	Rent Deduct's for C. P. and Other Sups. (332)			111,595		30
31	Rent Deduct's for Instr's and Equip't (333)			8		31
32	Miscellaneous Rent Deductions (334)			45,840		32
33	Total Rent Deductions			296,264		33
34	Interest Deduct's for Funded Debt (335)			499,645		34
35	Other Interest Deductions (336)			109,057		35
36	Amort. of Debt Disc. and Expense (338)			13,740		36
37	*Less* Release of Prem's on Debt—Cr. (339)			0		37
38	Total "Interest" Deductions			622,442		38
39	Loss on Operations of Others (337)			0		39
40	Amortization of Landed Capital (340)			49,552		40
41	Misc. Deductions from Income (341)			26,187		41
42	Total Miscellaneous Deductions			75,739		42
43	**Total Deductions from Gross Income**			994,445		43
44	**BALANCE NET INCOME**			5,354,332		44
45	Approp. Sinking and Other Res. Funds (350)			0		45
46	Dividend Approp. of Income (351)			3,600,089		46
47	Approp. Const. Equip. and Bett'm'ts (352)			0		47
48	Misc. Approp's of Income (353)			0		48
49	**BALANCE FOR CORPORATE SURPLUS**			1,754,243		49

Date issued ....19....
Should be issued not later than 20th

....
General Auditor

INCOME STATEMENT, 12 Months, 1921
EXHIBIT C

Line #	1	2	3	4	5	6	7	8	9	10	11
	Telephone Oper. Rev.	Telephone Oper. Exp.	Net Tel. Oper. Rev.	Other Oper. Revenue	Other Oper. Expenses	Net Other Oper. Rev.	Total Net Oper. Rev.	Uncollectible Oper. Rev.	Taxes on Operation	Total Deductions from Oper. Rev.	Total Oper. Income
Company A.....	17,583,879	12,781,720	4,802,159	0	0	0	4,802,159	133,889	960,033	1,093,922	3,708,237
Company B.....	1,730,258	1,206,127	524,131	0	0	0	524,131	18,000	81,813	99,813	424,318
Company C.....	6,712,745	4,493,106	2,219,639	0	0	0	2,219,639	82,500	384,069	466,569	1,753,070
Company D....	8,173,249	5,472,141	2,701,108	0	0	0	2,701,108	104,813	549,431	654,244	2,046,864
Company E.....	56,532,966	35,283,309	21,249,657	13,248	12,502	746	21,250,403	298,127	3,493,356	3,791,483	17,458,920
Company F.....	20,593,011	14,463,572	6,129,439	0	0	0	6,129,439	134,900	759,105	894,005	5,235,434
	111,326,108	73,699,975	37,626,133	13,248	12,502	746	37,626,879	772,229	6,227,807	7,000,036	30,626,843
Duplications ...	*765,930*		*765,930*				*765,930*				*765,930*
Net........	110,560,178		36,860,203				36,860,949				29,860,913

INCOME STATEMENT, 12 Months, 1921
EXHIBIT C Page 2

Line #	12	13	14	15	16	17	18	19	20
	Rent Rev. from Lease of Telephone Plant	Miscel-laneous Rent Rev.	Dividend Revenues	Interest Earned	Interest Charged Construc-tion	Sinking and Other Res. Funds	Profits from Operations of Others	Miscel. Non-Operating Revenues	Total Non-Operating Revenues
Company A	6,092	65,796	179,933	54,035	0	0	0	3,148	309,004
Company B	0	0	10,922	41,396	0	0	0	0	52,318
Company C	0	14,247	727,287	114,638	8,566	18	0	3,314	868,070
Company D	0	8,556	11,742	94,061	13,232	9,139	0	3,999	140,729
Company E	410	454,277	4,157,672	756,404	0	1,641	0	16,455	5,386,859
Company F	150	43,505	480,072	664,180	0	9,853	0	7,739	1,205,499
	6,652	586,381	5,567,628	1,724,714	21,798	20,651	0	34,655	7,962,479
Duplications		*85,105*	*4,360,676*	*486,064*		*8,433*			*4,940,278*
Net		501,276	1,206,952	1,238,650		12,218			3,022,201

INCOME STATEMENT, 12 Months, 1921
EXHIBIT C Page 3

Line #	21	22	23	24	25	26	27
	Rent Expense	Miscel. Non-Oper. Exp.	Non-Oper. Taxes	Uncollectible Non-Oper. Rev.	Total Non-Oper. Rev. Deductions	Net Non-Oper. Rev.	Total Gross Income
Company A	25,709	0	0	0	25,709	283,295	3,991,532
Company B	0	0	0	0	0	52,318	476,636
Company C	24	2	1,054	234	1,314	866,756	2,619,826
Company D	356	722	3,835	239	5,152	135,577	2,182,441
Company E	171,803	8,644	79,716	6,235	266,398	5,120,461	22,579,381
Company F	13,439	3,919	74,026	772	92,156	1,113,343	6,348,777
	211,331	13,287	158,631	7,480	390,729	7,571,750	38,198,593
Duplications						*4,940,278*	*5,706,208*
Net						2,631,471	32,492,385

INCOME STATEMENT, 12 Months, 1921
EXHIBIT C Page 4

Line #	28	29	30	31	32	33	34	35	36	37	38
	Rent Deduct's for Lease Tel. Plant	Rent Deduct's for Tel. Office	Rent Deduct's for C. P. and Other Sup.	Rent Deduct's for Instr's and Equip.	Misc'l Rent Deductions	Total Rent Deduct's	Interest on Funded Debt	Other Interest Deductions	Amort. Dept. Disc. and Exp.	Less Release of Prem. or Debt Cr.	Total Int. Deduct's
Company A	0	90,283	76,982	23	24,781	192,069	608,869	39,647	0	0	648,516
Company B	0	5,591	9,341	2,350	0	17,282	0	886	0	0	886
Company C	0	47,130	48,378	1	29,256	124,765	872,515	922	40,463	0	913,900
Company D	0	87,896	37,088	123	20,007	145,114	1,149,225	4,613	1,249	0	1,155,087
Company E	16,500	242,711	1,498,893	1,464	18,043	1,777,611	3,320,604	25,061	0	0	3,345,665
Company F	0	138,821	111,595	8	45,840	296,264	499,645	109,057	13,740	0	622,442
	16,500	612,432	1,782,277	3,969	137,927	2,553,105	6,450,858	180,186	55,452	0	6,686,496
Duplications		*467,904*	*333,450*	*2,216*	*47,465*	*851,035*	*349,773*	*139,057*	*5,667*		*494,497*
Net		144,528	1,448,827	1,753	90,462	1,702,070	6,101,085	41,129	49,785		6,191,999

INCOME STATEMENT, 12 Months, 1921
EXHIBIT C Page 5

Line #	39	40	41	42	43	44	45	46	47	48	49
	Loss on Oper. of Others	Amortization of Landed Capital	Miscel. Deduct's from Income	Total Miscellaneous Deductions	Total Deduct's from Gross Income	Balance Net Income	Approp. to Sinking and Other Res. Funds	Dividends	Approp. Const. Equip. and Bett.	Miscellaneous Appropriations of Income	Balance for Corp. Surplus
Company A......	236	0	0	236	840,821	3,150,711	0	3,021,624	0	4,020	125,067
Company B......	0	0	0	0	18,168	458,468	0	320,000	0	0	138,468
Company C......	0	0	3,677	3,677	1,042,342	1,577,484	0	1,284,000	0	0	293,484
Company D...	0	0	4,057	4,057	1,304,258	878,183	0	664,809	0	0	213,374
Company E....	0	139,001	13,515	152,516	5,275,792	17,303,589	0	10,000,000	0	0	7,303,589
Company F....	0	49,552	26,187	75,739	994,445	5,354,332	0	3,600,089	0	0	1,754,243
	236	188,553	47,436	236,225	9,475,826	28,722,767	0	18,890,522	0	4,020	9,828,225
Duplications....					*1,345,532*	*4,360,676*		*4,360,676*			
Net.........					8,130,294	24,362,091		14,529,846			

DUPLICATIONS IN COMBINED INCOME STATEMENT, 12 Months, 1921
REVENUES
EXHIBIT D

Line numbers refer to Work Sheets	Line #1 Account #300	Line #13 Account #311	Line #14 Account #312	Line #15 Account #313 01	Line #17 Account #314	Line #20 Total	Line #26	Line #27
Co. A from Co. B	6,600		105,496			105,496	105,496	112,096
Co. A " Co. E	305,130							305,130
Co. B " Co. A	7,145			30,000		30,000	30,000	37,145
Co. B " Co. E	9,493							9,493
Co. C " Co. D	113,241		663,644			663,644	663,644	776,885
Co. D " Co. C	94,223			31,080	8,433	39,513	39,513	133,736
Co. E " Co. A	87,435							87,435
Co. E " Co. B	2,432							2,432
Co. E " Co. F	107,101	85,105	3,591,536	424,984		4,101,625	4,101,625	4,208,726
Co. F " Co. E	33,130							33,130
	765,930	85,105	4,360,676	486,064	8,433	4,940,278	4,940,278	5,706,208

DUPLICATIONS IN COMBINED INCOME STATEMENT, 12 Months, 1921

EXPENSES

EXHIBIT D Page 2

	Line #29 Account #331	Line #30 Account #332	Line #31 Account #333	Line #32 Account #334	Line #33 Total	Line #34 Account #335	Line #35 Account #336	Line #36 Account #338	Line #38 Total	Line #43	Line #44 and Line #46
Co. A to Co. B.....	4,010	2,889	23	223	7,145		30,000		30,000	37,145	
Co. A " Co. E.....	48,841	35,560	0	3,034	87,435					87,435	
Co. B " Co. A.....	3,687	2,658	255	0	6,600					6,600	105,496
Co. B " Co. E.....	1,359	979	94	0	2,432					2,432	
Co. C " Co. D.....	45,130	38,321	0	10,772	94,223	39,513			39,513	133,736	
Co. D " Co. C.....	63,256	35,602	453	13,930	113,241					113,241	663,644
Co. E " Co. A.....	170,446	122,876	1,220	10,588	305,130					305,130	
Co. E " Co. B.....	5,303	3,823	38	329	9,493					9,493	
Co. E " Co. F.....	18,506	13,341	133	1,150	33,130					33,130	
Co. F " Co. E.....	107,366	77,401	0	7,439	192,206	310,260	109,057	5,667	424,984	617,190	3,591,536
	467,904	333,450	2,216	47,465	851,035	349,773	139,057	5,667	494,497	1,345,532	4,360,676

SECTION 23

INSTALLATIONS

CONTENTS

SECTION 23

INSTALLATIONS

GENERAL.—The subject of installations is considered from the point of view of the public accountant or systematizer who has been summoned to the office of a client to discuss the matter of a new system. The same procedure would be followed by a systematizer within an organization.

The accountant may or may not have had previous experience in the client's line of business. Nevertheless, his first problem is to satisfy the client that he has the qualifications to handle the engagement properly—this may be accomplished by references to past experience in the same line, or to general experience, together with references to the distinctive problems of the particular business. An acquaintance with the latter, even though it may be casual, and a definite plan of action will make a favorable impression upon all persons with whom the accountant may come in contact.

Preparatory Investigation

POINTS TO BE DETERMINED.—A system of accounting records is so vital a part of any business that the planning of one should invariably be preceded by a **preparatory investigation** or survey of the entire business.

The preparatory investigation should determine:

I. Nature and scope of the engagement.
II. Purpose or plan as conceived by the management.
III. Nature of the business.
IV. Personnel.
V. Outline of plant, premises, and present methods.
VI. General accounting and office procedure.

A **questionnaire** or **survey sheet** outlining suggestive points to be covered in the preparatory investigation will save time, will constitute a permanent record of the existing conditions, thereby eliminating a possible repetition of the same questions, and will afford a basis for later study of the entire problem.

The following is a suggestive outline of the points to be covered in the preparatory investigation.

I. THE NATURE AND SCOPE OF AN ENGAGEMENT.—It should be determined whether:

(a) A new system is to be designed and installed complete.
(b) It is an improvement in present methods and results, which may be (1) complete, or (2) partial.
(c) It is an elaboration or amplification of results and statistics for management control.

II. THE PURPOSE OF PLAN—AS CONCEIVED BY MANAGEMENT.—The purpose which the proposed installation is to serve, as conceived by the

management, is usually the result of the practical man's views acquired from experience, but sometimes acquired from an interchange of ideas at conferences, etc. These practical ideas frequently go to the very heart of the problem and indicate the essential points to be covered. The systematizer may, however, be able to plan a method for the presentation of these essential facts and other related facts in a manner that may be more clear, and at the same time provide or suggest a unit of measurement.

Example 1.—The general manager of a plant may wish to be informed daily as to the volume of production. The production may be increasing—a fact gratifying in itself; but if the rate of production per man-hour has decreased, it means that the labor costs have necessarily increased—a fact not so gratifying; or the production may exceed the orders received, and thereby be going into inventory. Increased inventories signify idle capital, etc.

Example 2.—An occasional loss of one piece or article may seem small and reasonable if it is 1, 2, or 3% of the production, and on the other hand, it may be a matter that may deserve attention if it is 10% of the production. By proper planning the systematizer can present these facts in intelligible form to managers.

III. THE NATURE OF BUSINESS.—The systematizer should attempt to understand the whole business problem of the client, and to extricate himself from the narrow confines of drawing forms, recording facts, suggesting devices, and guarding against dishonest employees, in order that he may consider the client's requirements from the position of the executive, bring into play the common sense and business judgment which he has presumably acquired, and accordingly plan to gather all the essential points or facts, and no more, that will serve in the administrative control of the business, and at the same time reflect the true financial position of the organization and the result of operations.

The client will be pleased, as a rule, to see the accountant show an interest in his business and will talk freely about his enterprise.

Possible **topics of discussion:**

- (a) **Product or Line** (commodities handled and their use to consumers)
- (b) **Raw Materials or Merchandise**
    1. Source (distance)
    2. Plan of buying and storage
    3. Price (seasonal condition of market)

Seasonal fluctuations in prices may suggest the advisability of the purchase and storage of large quantities of raw materials when prices are low, if there are storage facilities and the necessary capital is available. It may be possible to warehouse the material and hypothecate it for borrowing purposes.

Distances may be short, the transportation question may offer no problem during any season of the year, prices may fluctuate little, and it may be desirable, therefore, to recommend the discontinuance of a practice of buying goods in large quantities and thereby unnecessarily tying up sums of working capital.

- (c) **Method of Distribution**
- (d) **Market or Outlet**
- (e) **Market Conditions**

The method of distribution and the market will suggest the kind of sales statistics that the sales manager should have, and, considered with the type of commodity, will suggest the type of advertising that may be helpful.

The accountant has an exceptional opportunity to observe the methods used by his clients. The keen, discriminating observer absorbs good ideas from the various places he visits, and these observations frequently suggest methods, units of measurement, or other points, which may be used advantageously by some other client.

(f) Trend of Sales and Prices Throughout the Year

For the producer, the trend of sales may be one of the biggest problems. If the sale of a certain commodity is seasonal, the producer is confronted with one of these problems:

1. Whether to continue on an even schedule of production and stock the finished product during the off-season, which carries with it the matter of finance and the danger of changing style, design, or scientific improvements.
2. Whether to build up an organization within season and dismiss it out of season. This method of procedure is both difficult and expensive. It is costly to break in new operators because it requires more supervision, it retards production, and the scrap loss is greater; also the capital investment is unproductive out of season.
3. The ideal method is to complement one seasonal product with other seasonal products, which are in and out of season at different times, and which are produced on practically the same equipment.

(g) Normal Capacity

Normal capacity is an important point to be considered in calculating sales prices, comparing costs, analyzing the results of operations, and preparing budgets.

It is generally conceded that it is unsound economically to attempt to sell, in a competitive market, the output of a plant operating at less than normal capacity at prices that will absorb the burden of the idle capacity and carry the usual per cent of profit. The burden of idle capacity, or the extra profit arising from production in excess of normal capacity, may be shown to advantage as a separate item in the statement of operating results.

(h) Peaks and Valleys in Production

(i) Are Finished Articles Stocked?

(j) Advertising—Extent

1. Mediums
2. How handled?

IV. THE PERSONNEL.—In relation to personnel the systematizer should proceed as follows:

(a) Obtain, if possible, a Chart of Present Organization—with Duties and Responsibilities

Such information will save time and may permit the accountant to avoid occasional embarrassment from having addressed an inquiry to the wrong executive, if jealousy and friction exist in the organization.

(b) Ascertain whether Recommendations as to Rearrangement of Duties and Responsibilities Will be Entertained

V. OUTLINE OF PLANT OR PREMISES AND PRESENT METHODS.—Under this head proceed as follows:

(a) Obtain or Sketch Plan of Building or Buildings

A plan will crystallize and sometimes correct impressions gathered from passing through the premises.

(b) Ascertain Natural Subdivisions or Departments
Kind of Operations in Each.

A knowledge of the natural subdivisions or departments will suggest the proper units for the division of overhead, supervision, and costs.

(c) Ascertain Route of Materials from Receiving Department, through Stores, etc., to Shipping or Delivery Department

The route of material from the receiving room to the shipping or delivery department indicated on the layout of the buildings will clearly show any back-tracking and will probably suggest the vantage point for verifying the counts for the purpose of maintaining the control over quantities of material in process of manufacture.

(d) Ascertain Method of Handling and Storing Materials

Adequate stores control at a reasonable cost is one of the problems of every manufacturing organization. Every business man has experienced the disappointment which comes from discovering at the end of a fiscal period that the profit shown by the books is greatly diminished by an unexplained shortage in inventory.

(e) Ascertain Method of Material Identifications while in Process

A proper system of identifying material while in process will aid in solving one of the difficult problems of controlling such materials in a continuous process of production, in distinguishing the operator responsible for defective workmanship, and in keeping the lots separated for cost purposes.

(f) Ascertain Method of Reporting

1. Material received
2. Material withdrawn from stock
3. Production
4. Scrap
5. Salvage
6. Sales
7. Shipments
8. Labor time
9. Low stock to purchasing department

The method of reporting and summarizing the above points will largely determine how accurately and promptly the management is kept informed of the activities of the business.

(g) Ascertain Method of Controlling

1. Production

The absence of a method of controlling production will spell unbalanced inventories and unkept delivery promises.

2. Inventories

The absence of a method of controlling inventories and in some manner relating them to sales orders will result in tying up large sums of capital, or paying premium prices for small quantities of material purchased for immediate delivery, or paying express charges to prevent a shutdown.

(h) Obtain Samples of Forms in Use and Their Purpose

These will indicate the present practice and may suggest minor details which the client has been receiving, and effect a saving of time in planning the new forms, and minimize the possibility of overlooking some details.

VI. GENERAL ACCOUNTING AND OFFICE PROCEDURE.—Make your investigation along the lines suggested by the following questions:

(a) Purchasing

1. Has a purchasing department been organized to handle purchasing?
2. By whom is purchasing done?
3. To whom is he responsible?
4. How are purchase requirements made known to purchasing agent or department?
5. Are purchase requisitions used?
6. Do requisitions show quantities of materials on hand as well as requirements?
7. What controls or determines quantities to be ordered?
8. Are quotations solicited from vendors?
9. Is a comparative record kept of quotations received?
10. How are orders placed with vendors?
11. Are purchasing order forms used? How many copies are made and what are the various copies used for?
12. What record of filled and unfilled orders is kept?
13. How are purchase orders followed up?
14. Does the purchasing department keep a record of receipts of materials on each purchase order?
15. How is the purchasing department advised of receipt of purchases?
16. Are vendors' invoices passed through purchasing department for approval? What is the routine procedure?
17. What notations are made on purchase order to indicate approval of vendor's invoice?
18. What record is made to prevent approving of duplicate invoices?
19. How are claims for shortages, deficiency in quality, and overcharges handled?
20. Is it possible to determine from the records of the department the liability for purchase commitments?
21. Is a comparative record of purchases by commodities kept?

When the purchasing is done by any person other than the proprietor of a business, a system should be employed which will record the quotations received and indicate the reason for placing an order with one organization rather than another, in order that the purchasing agent's activities may be checked up in the same way as the cashier's. The purchasing agent is always liable to temptation from unscrupulous sales organizations. The consideration may not be a money bribe, but salesmen frequently employ subtle means of creating a sense of obligation on the part of the purchasing agent, and of cultivating friendships. The natural inclination of a purchasing agent is to lean slightly toward a friend.

It is important that the activities of the purchasing agent be controlled as to quantities of materials purchased, because he is tempted sometimes to buy larger quantities than are necessary, to secure slightly better prices, and fails to give adequate consideration to the financial side of the business, and the amounts of capital tied up in a large number of more or less small items considered singly, but which when considered in the aggregate amount to a considerable sum.

A purchasing agent never wishes to be held responsible for hold-ups in production or delays in shipments, and he is, therefore, frequently tempted to meet the wishes of the production or sales departments without giving adequate consideration to the financial side of the business, unless proper control is exercised.

(b) Receiving and Storing Materials

1. Where are materials received?
2. By whom are they received? To whom is he responsible?
3. How are they inspected?
4. What receiving records are kept?
5. Are receiving reports made out? How many copies, to whom are they sent, and for what are they used?
6. How is purchasing department notified of damaged condition of packages? What is the procedure?
7. Where are materials stored?
8. Under whose control are they?
9. Are stock records kept?
10. Are stock records controlled by general books?
11. How often are stock records checked up by a physical count of materials?
12. Are materials withdrawn from stores upon requisitions only?
13. What is the procedure in handling stores requisitions?
14. How are materials received checked against purchase invoices as to quantity, quality, price, extensions, etc.?
15. How are materials to be returned to vendors handled?

As a general thing, it is a good plan to have the receiving and storing of materials come under the purchasing department, or the person to whom the purchasing agent is responsible. When the stores department is under the supervision of the superintendent or production manager, there is frequently a tendency to sacrifice all records and control to getting out production. Even though it may not be the desire or purpose of the chief to destroy the records or control, his assistants frequently override the stores department. The variation that normally exists between the physical inventory and the book records, unless a reserve is provided, is the "jinx" in the profit and loss accumulated from month to month, as shown by the books. Therefore, every effort should be made to reduce this variation to a minimum in order that the interim profit and loss figures may be relied upon.

(c) Sales

1. How are orders received?
2. What record is made of orders received?
3. Are sales orders made out for each order received? If so, how many copies are made and for what are they used?
4. Do all orders pass through credit department for approval before being sent out to be filled?
5. What records are kept by sales department?
6. Is there a field staff of salesmen?
7. How are they paid?
8. What records of their salaries, expenses, and commissions are kept?
9. How are sales classified?
10. Is a record of cost of sales kept? If so, how are sales costed?

11. How are salesmen kept advised of changes in price?
12. Is the sales invoicing done in this department?
13. How many copies of the sales invoice are prepared? To whom do they go and for what purpose?
14. Are all invoices checked for clerical accuracy and prices?
15. If sales orders or acknowledgments of orders are prepared, could this operation be combined with the billing?

The records of the sales department, in addition to recording the orders received, deliveries, follow-ups, and invoicing, should provide sales statistics which will permit the establishment of sales quotas by districts, the outlining of production schedules for the plant, and the preparation schedules for the purchasing department, the keeping in touch with or visualizing the products or lines which are moving and those which are not, the relative production of salesmen, and the cost of sales.

(d) Credits and Collections

1. Who passes upon credits?
2. To whom is he responsible?
3. What kind of credit records are kept?
4. Who is in charge of collections?
5. Are credits and collections handled as a single department?
6. What records of collections are kept?
7. How are slow accounts followed up?
8. What information is passed on to administrative and sales departments?
9. Are losses on account of bad debts heavy?

The relative size of accounts and the number of them will suggest the methods to be employed in verifying credits and in following up collections.

(e) General Accounting

1. Who is in charge of general accounting work?
2. To whom is he responsible?
3. What are the general books in use?
4. What are the subsidiary books in use?
5. How is the information to be recorded collated?
6. How is the work divided?
7. What is the system of internal check?
8. What is the system of control over cash receipts and disbursements?
9. Are all receipts deposited each day?
10. Who signs checks and what routine must be passed through before checks are signed?
11. Is an imprest cash fund maintained?
12. How are expenses distributed?
13. What statistical or analytical statements are prepared?
14. How often are books closed? How often are operating statements of condition prepared? In what form are they presented?
15. What records of plant or fixed assets are kept? Are they controlled by general books?
16. How often are they checked up by a physical inventory of assets?
17. Obtain list of present ledger accounts and note descriptions thereon.

The work of the cashier's department is regarded as coming under this division. It seems that the employer should exercise every reasonable precaution and use every available method to remove temptation from employees who have to do with the handling of cash, or securities, and if the employee defaults when these precautions have not been taken, the employer is as responsible for the loss as is the guilty employee.

(f) **Administrative**

1. What administrative departments are there?
2. Who are accountable heads and to whom are they responsible?
3. What are their various duties?
4. Are regular meetings of the department heads held? How are steps taken to insure co-operation of departments?
5. What records are kept by which the efficiency of departments may be determined?
6. How is incoming mail handled?
7. How is outgoing mail handled?

The filing and mailing departments frequently afford fields in which to make improvements. The opening and distribution of mail is frequently handled loosely. A chief executive, or his delegate, can exercise excellent supervision over all outgoing correspondence for the purpose of standardization of style, improvement of letter form, and prompt correction of errors in policy of the organization, by requiring a tissue copy of all outgoing mail of each day to be placed on his desk the first thing the following morning.

When it is possible for the same person to inspect the incoming mail and the tissue copies of all outgoing mail, that person, if of the proper type, soon has a complete picture of operations of the organization.

(g) **Pay-Rolls**

1. Who prepares the pay-roll?
2. Is a special pay-roll department in existence?
3. To whom is head responsible?
4. How are employees paid—cash or check?
5. How is amount of pay computed—piece-work, day-work, premium, bonus, etc.?
6. How long are the pay periods?
7. How often are pay-rolls closed and distributed?
8. From what is distribution made—time cards, time books, or what?
9. How is working time of employees recorded? By in-and-out clocks?
10. Are in-and-out clock cards checked with time or labor cards?
11. Are time cards extended and checked daily and immediately sent to pay-roll department?
12. Are pay-rolls checked daily?
13. What disposition of the time cards is made after pay-roll is computed?
14. What records of employees are kept?

There should be an absolute division between the persons who are responsible for the accumulation of the time and the preparation of pay-roll figures, and those clerks who are responsible for the filling of envelopes and the delivery of them to the employees.

(h) Cost Accounting

1. Is a cost department maintained?
2. Who is in charge and to whom is he responsible?
3. What kind of a cost system is in use?
4. Are the cost records controlled by the general books?
5. Are costs, including overhead, determined by departments or for the plant as a whole?
6. How often are cost records closed and statements prepared?
7. What are the forms and contents of the statements?
8. How are the various costs collated—from what sources?
9. Upon what basis is overhead distributed?
10. Is a standard burden rate used?
11. Are comparative monthly burden statements prepared? If so, what use is made of them?

(i) Production and Operating Departments

1. Who is in charge of production?
2. To whom is he responsible?
3. Is production departmentalized?
4. Who is in charge of departments and to whom are they responsible?
5. How is co-operation between departments insured?
6. Are standard specifications on file for all jobs or operations?
7. How are orders or instructions imparted to departments or workmen?
8. How is production planned?
9. How is work inspected?
10. What methods are employed to obtain the greatest efficiency from workmen?
11. Do workmen fill out their own time statements, or is this taken care of by time clerk?

Study of Survey

NATURE OF SURVEY.—The preparatory investigation should be followed by:

1. A careful consideration of:
   (a) The existing conditions.
   (b) Any anticipated or possible changes.
   (c) The purpose or plan as conceived by the management.
2. A determination of:
   (a) The objectives to be attained in order to promptly place before the officials the information that will serve most effectively in the administrative control of the business.
   (b) The method of procedure.
   (c) The forms to be used.
   (d) The schedule of accounts required.

THE OBJECTIVES OF A SYSTEM.—The general objectives of any system should be:

1. To record and clearly indicate:
   (a) The financial position of the organization as reflected in balance sheet accounts.

(b) The profit or loss by accounts in sufficient detail to analyze the major kinds of income and expense so that any variation can be readily discerned.
(c) The preventable leaks and losses.

For example, in manufacturing costs it is the usual practice to absorb the difference between the cost value of material spoiled and its scrap value in the prime cost of the good pieces finished. No exception is taken to that practice, but it is important that the production and executive departments be kept informed as to the actual cost value of the scrapped material. In a foundry the loss from oxidation, core breakage, etc., can profitably be shown in dollars and cents.

2. To establish:
   (a) A basis for comparing the results of one period with another.
   (b) Standards—predetermined or budget figures—to measure the variations therefrom in detail (not in total only), so that attention may be devoted exclusively to the unfavorable variations.

Executives cannot be expected to wade through a mass of detail figures, to digest them, and single out the exceptions or irregularities. Such a duty is tedious and laborious for most executives, and in consequence, the valuable information frequently available for the inspection and guidance of executives is not used. Some person who understands the significance of the reports submitted should digest them and single out the exceptions and irregularities for the executive's attention.

   (c) A basis for controlling inventories.
   (d) A basis for internal checks which will reduce temptation to a minimum.

A system which requires the collusion of two or more persons to conceal an irregularity is ordinarily a satisfactory internal check.

3. To make results obtainable promptly and with the least expenditure of effort.

A judicious application of **mechanical equipment** expedites the preparation of results, makes available information that is otherwise too expensive to gather and minimizes the expenditure of effort. Many kinds of appliances have been invented to facilitate the routine of the office. Most of them are good, some excellent, but they cannot all be used in each and every business, and it remains for the systematizer to recommend such appliances as are best fitted to the needs of the particular business.

METHOD OF PROCEDURE.—The methods to be used will vary with each case and will depend upon the volume of detail, objectives, plant arrangement, operating conditions, class of product, and nature of the business.

In each case, the method of procedure should be sufficiently flexible to permit the system to be progressively installed, if necessary, so that the employees may become acquainted with, and become adept in handling the new system without interference with the normal flow of business. Flexibility may prevent the discarding or discrediting of a system that is good as a whole because of some minor point which may interfere with and cause trouble for the whole system, unless that may be temporarily cut off.

FORMS TO BE USED.—In planning forms to be used, the following points should be kept in mind:

1. **Design.**—Forms should be designed to collect only the desired information with the least disturbance or expenditure of effort or time that is consistent with accuracy.

2. **Uses.**—The possibility of utilizing information in two or more ways.

3. **Future Requirement.**—The possible future needs or development.

4. **Number of Forms.**—The number of forms to be used should be kept down to the minimum, consistent with efficient handling and economy.

5. **Size.**—The purpose and use of each form will be the principal factor in determining its size. The following points deserve consideration in this connection.

No form should be so designed that to work with it will be awkward. Such inconvenience results sometimes when an attempt is made to include too much detail on a single form. Wide forms—from left to right—increase the possibility of entry upon a wrong line. Wide forms also result in a waste of paper, as much of the form is generally unused. Where great detail is necessary it is best to design two or more related forms upon which to assemble the detail. At first this may appear to result in an increase in the routine accounting work, but actual practice proves that it not only results in a saving of paper, but also increases the speed and accuracy with which the work is handled.

In planning forms for records, consider the safes and steel storage cabinets in which the records will be kept. Oftentimes, large unwieldy records have left officials between the choice of purchasing new safes or steel cabinets or leaving records out unprotected.

Consideration should also be given as to how forms may be cut from standard sizes of paper with least amount of waste. Forms as originally designed may often be made slightly smaller or larger, with the result that the only waste when the forms are cut from standard sizes is the waste usual to trimming. At least 1/8 inch should be allowed on each side of the form for trimming. More allowance must be made on smaller than on larger forms.

A systematizer should be sufficiently familiar with **standard sizes of paper** to enable him to specify from which size the form may be most economically cut. The Writing Paper Manufacturers' Association has adopted a number of sizes which are considered regular or standard. However, the average printer or paper dealer does not carry all these sizes in stock. The sizes and weights commonly used for office forms and records and which may be obtained with little difficulty are as follows. The **substance number,** which is coming into use, indicates the weight per ream of 500 sheets of the various sizes, as shown below.

Flats and Bonds

Size	Substance No. 13 lb.	Substance No. 16 lb.	Substance No. 20 lb.
17 x 22	13	16	20
17 x 28	16½	20½	25½
19 x 24	16	19½	24½
22 x 34	26	32	40
24 x 38	32	39	49
28 x 34	33	41	51

Ledgers

Size	Substance No. 20 lb.	No. 24 lb.	No. 28 lb.	No. 32 lb.	No. 36 lb.
17 x 22...	20	24	28	32	36
17 x 28...	25½	30½	35½	40¼	46
19 x 24...	24½	29½	34	39	44
22 x 34...	40	48	56	64	72
24 x 38...	49	59	68	78	88
28 x 34...	51	61	71	81	92

Loose-Leaf

Size	Substance No. 20 lb.	No. 24 lb.	No. 28 lb.	No. 32 lb.	No. 36 lb.
19¼ x 24¼...	25	30	35	40	45
22½ x 28½...	34½	41	48	55	61½
22¾ x 35½...	43	52	60½	69	77½
24½ x 24½...	32	38½	45	51½	58
24½ x 38½...	50½	60½	70½	80½	91

6. Quality and Grade of Paper.—Paper is made from two basic substances—wood fiber and rags. The pulp entering into wood fiber paper is treated during the manufacturing process with acid. The finished paper contains a small amount of this acid which causes the paper to turn yellow from exposure, colored ink to fade, and the paper to become brittle. For this reason, wood fiber paper is suitable only for interoffice communications and forms which do not constitute a part of the permanent records.

Permanent records should be made on ledger or bond paper with a **rag content** of 30% or better. The greater the per cent of rag content and the less the rag stock has been chemically bleached or treated, the better the quality of paper. The various kinds of ledger and bond paper are very similar except as to lengths of fiber. Ledger paper contains a shorter fiber and is calendered a greater number of times to give it a smooth and glazed surface.

The paper selected should be tough and durable and flexible enough to crease without cracking. The paper should be of a grade which will not fade, diminish in tone or yellow with age, and be able to take several erasures without blotting or allowing the ink to show through on reverse side.

Ledger papers used in bound books and loose-leaf forms usually run from substance #20 to substance #36. **Loose-leaf forms** require a slightly heavier grade of paper than do bound books of the same size. Small forms can be of a lighter grade than large forms. Bond papers are used mostly for the smaller forms and for letterheads and bill heads.

On the whole, paper is difficult to judge even by men experienced in the industry. Probably the safest plan for the systematizer is to acquaint himself with a few of the better known makes of paper and recommend them for forms and records.

The following is a list of some of the better known or standard makes of ledger and bond paper.

Ledger

Brown's Linen Ledger	L. L. Brown Paper Co.
Whiting	Whiting Paper Co.
Weston Linen	Byron Weston Paper Co.
Scotch Linen	Parsons Paper Co.
Record	Whiting Paper Co.
Advance Linen	L. L. Brown Paper Co.
Reliance	American Writing Paper Co.
Mercantile Record	Parsons Paper Co.
Sales Record	Millers Falls Paper Co.
Prestige Linen	Neenah Paper Co.
Hamilton's	W. C. Hamilton & Sons

Bond

Crane's Safety and Parchment Bond	Crane Co.
Coupon	American Writing Paper Co.
Advance	L. L. Brown Paper Co.
Parsons	Parsons Paper Co.
Imperial	Whiting Paper Co.
Defiance	Byron Weston Paper Co.
Roman	American Writing Paper Co.
Textile	Whiting Paper Co.
Empire	Carew Manufacturing Co.
Certificate	Crocker-McElwain Co.
Hammermill	Hammermill Paper Co.

7. Color of Paper.—Bond paper is made in a wide range of colors. Ledger paper is usually made in white, buff, and blue. In sets of forms where color is a factor, the color should be selected with sufficient contrast so that no confusion will arise from the usual slight variations in color between runs of the same quality or make of paper or from the greater variations between different qualities or makes of paper.

8. Ruling and Printing.—The color combinations generally used in ruling forms are red and blue on white paper, and brown and green on buff paper. Forms may be drawn or sketched in pencil and the colors to be used noted on the form. Lines to be printed and not ruled should be indicated in black ink. Printed headings on the forms should be shown in ink. Vertical money columns should be $\frac{1}{8}$ inch wide for each digit in the largest probable amount to be placed in the column. The ordinary typewriter spacing is 6 lines to the inch.

The System Report

SCOPE OF REPORT.—The content of the system report will depend upon the nature of the engagement, which may be limited to an examination of the system in use and the suggesting of improvements, or it may be to prepare a system and supervise its installation.

If the engagement is limited to an examination of the existing system and the suggesting of improvements, the extent to which such suggestions will be adopted depends largely upon clearness with which they are presented, and the results which may be expected are pointed out. In the event that a complete system has been prepared and is ready to be installed, its success,

while greatly contingent upon the simplicity of operation and the extent to which co-operation is secured from the client's employees, depends somewhat upon the clear and convincing statements contained in the report of the reasons for the changes, the use and importance of the forms and statements to be used, and the necessity for following instructions as outlined.

METHOD OF PROCEDURE.—To make clear the desired purpose, an outline of the existing system should be given, followed by the suggested changes, together with references to forms and statements to be used, exact copies of which should always be incorporated in the report. The advantageous results to be expected should be pointed out, in phrases readily understood by everyone who may be concerned with the operation of the system. Successful co-operation from the client's employees can best be secured when they have a clear understanding of the work to be done.

The report should include a chart of accounts made up of the accounts to be kept in the general or controlling ledger and in the subsidiary ledgers. Each account should be followed by a short description and an outline of the entries to be posted to it, for guidance of the various employees. The volume of matter in the report and the chart of accounts together with any other circumstances connected with an engagement, will have a bearing on whether the chart of accounts should be submitted under separate cover or incorporated in the body of the report.

The judicious use of graphic charts will, in many cases, assist in presenting important facts and help to picture the story as told by the accounting records.

The importance of providing suitable mechanical equipment and such other matters as proper lighting, ventilation, and heating of the offices, should be given due consideration in preparing the report.

Finally, the report should indicate how the installation of the system may be accomplished with least confusion and interruption of regular activities.

SECTION 24

PUBLIC UTILITIES

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SECTION 24

PUBLIC UTILITIES

History of Public Utility Regulation

PUBLIC UTILITY DEFINED.—The term "public utility" refers to a class of industries in the performance of whose service the public is concerned in a peculiar way. These undertakings are characterized as "affected with a public interest." They comprise steam and electric railways, express, sleeping car, telephone, telegraph, cable, and automotive companies, and pipe lines (so-called common carriers); and gas, electric, and water companies (so-called local utilities). Sometimes other enterprises fall within the scope of the definition, as, heating and refrigerating, messenger and signaling companies, toll bridges, carriers by water, warehousemen and wharfingers.

The public's right to regulate is based on the common law, but it has been strengthened by statutes and court decisions. Originally conceived as a right to be exercised over monopolies, it now has its most important application to common carriers. The services they perform are a legitimate function of the state. Also when delegated to private parties, immunity from legitimate control is not granted. Such enterprises exist by public grant of monopolistic privilege.

NATURE OF STATE REGULATION.—The aim of state regulation is to realize under monopoly the safeguards provided in the industrial world by competition. The common law impose upon monopolies an obligation to protect the public's interests. They must provide adequate facilities to all who apply, at reasonable rates, without discrimination. But the common law does not adequately safeguard users of public services, because it is merely punitive. Positive regulation is essential.

Except for control through charter and franchise restrictions, railroads were not regulated until 1870, and other public utilities until later. By 1870 abuses of unregulated monopoly had become evident. Many state legislatures then adopted a policy of restrictive regulation by confirming the common law obligations and passing restrictive laws. Rates were prescribed and publicity requirements were imposed. In some instances administrative machinery was set up. The utilities, particularly the railroads, questioned the legality of these powers, but it was sustained by the courts and became the acknowledged expression of state regulatory policy up to 1905. The legislatures are still the source of power to regulate, but more effective methods have superseded direct legislative control.

The later history of public utility regulation in the United States is that of supervision exercised through administrative commissions. Congress inaugurated this policy in 1887 when it passed the "Act to Regulate Commerce," which established the Interstate Commerce Commission. The New England

states organized commissions at an early date which were engaged largely in gathering statistical data and promoting safety. The Massachusetts Board of Railway Commissioners, established in 1869, possessed advisory powers only; but it was a step toward effective control. In the decade 1870 to 1879 commissions with mandatory powers were established in Illinois, Iowa, Minnesota, Wisconsin, California, and Georgia. In the reaction following the panic of 1873 most of their powers were withdrawn.

Control through administrative commissions exercising mandatory powers dates from 1900. Establishment of the Wisconsin and New York commissions in 1905 and 1907 gave stimulus to a movement which resulted in the establishment or reconstitution of more than thirty commissions in the decade 1905–1915. On Jan. 1, 1923, each state except Delaware had a public utility commission; also Hawaii, Porto Rico, District of Columbia, and the Philippines. These commissions exercise jurisdiction over common carriers, or local utilities, or both. The Interstate Commerce Commission exercises jurisdiction over steam and electric railways, telephone, telegraph, cable, express, and sleeping car companies, and pipe lines when engaged in interstate commerce. The Interstate Commerce Commission and most of the state commissions have power to prescribe, review, or suspend rate schedules; to prohibit discriminatory practices; to establish service standards; to regulate capitalization; and to impose certain publicity requirements.

REGULATION OF ACCOUNTS—ORIGIN.—In addition to powers enumerated above, the Interstate Commerce Commission and most of the state commissions possess authority to regulate accounting practices of utilities under their jurisdiction. The Massachusetts Board of Railway Commissioners, organized in 1869, received in 1876 the first grant of authority over railway accounts when "authorized to prescribe a system on which the books and accounts of corporations operating railroads or street railways should be kept in a uniform manner." The Massachusetts Board of Gas Commissioners was granted this power over gas companies in 1886, and electric companies in 1887. The subject was considered by the New York Special Railroad Committee of 1879, but the next important grants of authority came with the establishment of the Wisconsin and New York commissions in 1905 and 1907.

Federal Regulation of Public Utility Accounts

ACT TO REGULATE COMMERCE AND ACCOUNTING REGULATION.—The 20th section of the Act to Regulate Commerce, enacted in 1887, authorized the Interstate Commerce Commission, in its discretion, to prescribe for utilities under its jurisdiction "a uniform system of accounts and the manner in which such accounts shall be kept," and to require certain specific reports. The law contained no provision for enforcement and the railways did not co-operate. It was not until 1906 that Congress made uniform accounts compulsory.

Section 20, as then amended, gave the Commission authority to "prescribe forms of any and all accounts, records, and memoranda to be kept by carriers." It also provided that "the Commission shall at all times have access to all accounts, records, and memoranda"; that it "shall be unlawful for such carriers to keep any other accounts, records, or memoranda than those prescribed or approved"; and that the Commission might require monthly and special, as well as annual reports. Penalties are imposed for violation of orders issued under authority of this section.

Effectiveness of the Commission's policy after 1906 has been based on facts secured from accounting records kept according to prescribed regulations.

NATURE OF PUBLIC UTILITY ACCOUNTING.—Public utility accounting is a branch of general accounting and involves no new principles. Application of principles to detailed requirements of the business give it a special character. Railway accounts illustrate this, as shown by the following characteristics of the business, which determine the structure of railway accounts:

1. Railway operating revenues consist of many relatively small items. (Passenger fares paid railroads in the United States in 1920 exceeded 1,200 million.)
2. Railway plant and equipment are distributed over much territory.
3. Railway transportation requires the performance of many highly organized interrelated services.
4. Many railway facilities are used jointly by two or more companies.
5. Through-traffic requirements develop complex intercompany relationships.
6. Costs of transportation service are largely joint costs, subject to allocation on an arbitrary basis.
7. Accounting and statistical requirements of commissions must be satisfied.
8. Various kinds of information, otherwise unnecessary, are needed by the utilities to defend their rights in proceedings before the commissions.

JURISDICTION OF INTERSTATE COMMERCE COMMISSION.—Jurisdiction of the Interstate Commerce Commission, limited by the original Acts to Regulate Commerce to rail and joint rail and water carriers, was extended in 1906 to include express and sleeping car companies and pipe lines, and in 1910 to include telephone, telegraph, and cable companies. The Commission prescribes uniform systems of accounts for all transportation agencies under its jurisdiction.

ACCOUNTING CLASSIFICATIONS.—The basis of supervision of public utility accounts is a system of account classifications and a body of principles governing their use. Classifications for steam railways were first issued. Classification of Operating Expenses, Classification of Operating Revenues, and Classification of Expenditures for Road and Equipment, became effective July 1, 1907. The first was a revision of a classification proposed under the original provisions of the act, based upon the so-called Saratoga Classification of 1879. The Form of General Balance Sheet Statement, and the Form of Income and Profit and Loss Statement first became effective June 15, 1910, and July 1, 1912, respectively.

Classification of Expenditures for Road, and Equipment, Operating Expenses, and Operating Revenues for electric railways became effective Jan. 1, 1909.

Classification of Expenditures for Real Property and Equipment, Classification of Operating Expenses, and Classification of Operating Revenues for express companies became effective July 1, 1908; Form of General Balance Sheet Statement, July 1, 1911.

Classification of Operating Expenses and Classification of Operating Revenues for carriers by water became effective Jan. 1, 1911; Classification

of Expenditures for Real Property and Equipment, Classification of Income and Profit and Loss Accounts, and Form of General Balance Sheet Statement, on Jan. 1, 1913.

Uniform System of Accounts for Telephone Companies, Classes A and B, became effective Jan. 1, 1913; Uniform System of Accounts for Telephone Companies, Class C. Jan. 1, 1915; Uniform System of Accounts for Telegraph and Cable Companies, Jan. 1, 1914.

Classification of Operating Revenues and Operating Expenses for pipe lines became effective Jan. 1, 1911; Classification of Investment in Pipe Lines, Pipe Line Operating Revenues, and Pipe Line Operating Expenses (in part a revision of 1911 classification), Jan. 1, 1915.

Classification of Revenues and Expenses of Sleeping Car Operations, of Auxiliary Operations, and of Other Properties for Sleeping Car Companies, became effective July, 1912.

Classifications for steam and electric railways have been modified from time to time. In some instances thorough revisions have been made, the most important resulting in revised classifications for steam and electric railways and express companies, effective since July 1, 1914. Classifications for steam railways are now in the process of revision.

CO-OPERATION WITH ACCOUNTING OFFICERS.—The various classifications were drawn with the co-operation of public utility accountants. In case of steam railways this co-operation was effected through the Railway Accounting Officers Association and its Committee on Corporate, Fiscal, and General Accounts. Advice and co-operation of the American Railway Association, the Freight Claim Association, the American Electric Railway Accountants Association and its Committee on Standard Classification of Accounts, the Association of Express Accountants and its Committee on Corporate and Fiscal Accounts, and the accounting officers of other utilities interested were sought. Co-operation with state utilities commissions has been effected through the National Association of Railway and Utilities Commissioners. In formulating systems of accounts for utilities under its jurisdiction, "the requirements of railway accounting, strictly defined, were first considered, and the accounting structure thus devised was modified to meet the peculiar requirements of other agencies." [1] For this reason the uniform system of accounts prescribed for steam railways is analyzed in detail below.

PRINCIPLES UNDERLYING INTERSTATE COMMERCE COMMISSION CLASSIFICATIONS.—Accounting classifications prescribed by the Interstate Commerce Commission were based on principles which, prior to 1907, received little attention. By emphasizing proper accounting treatment of construction costs, additions and betterments, and depreciation, the Commission gave greater accuracy to the figure for investment in road and equipment. By proper discrimination between charges to capital and to operations, it gave uniform significance to the figure for net revenue. A line was drawn between transportation service and "outside operations." Distinction was made between operating activities, results of which are shown in figure of total operating income; non-operating, contractual, or financial activities, results of which are shown in figure of net income; and surplus appropriation and adjustment items, net results of which are shown in income balance transferred to credit (or debit) of Profit and Loss. Of

[1] Henry C. Adams, from 1887 to 1911 in charge of accounts and statistics for I. C. C., in "American Railway Accounting."

the 6 classifications applicable to steam railways, 2 are classifications of balance sheet accounts, and 4 are classifications of income accounts.

INVESTMENT IN ROAD AND EQUIPMENT.—An entire classification, with 3 general and 62 primary accounts, is prescribed for investment in road and equipment.

General account **Road** carries cost of land and fixed improvements in 47 primary accounts including, for example: Engineering, Land for Transportation Purposes, Bridges, Trestles, and Culverts, Rails, Track Laying and Surfacing, Telegraph and Telephone Lines, Power Plant Buildings.

General account **Equipment** carries cost of transportation equipment in 8 primary accounts: Steam Locomotives, Other Locomotives, Freight-Train Cars, Passenger-Train Cars, Motor Equipment of Cars, Floating Equipment, Work Equipment, Miscellaneous Equipment.

General account **General Expenditures** carries expenditures made in connection with acquisition and construction of road and equipment, which are not properly assignable to specific property units. The 7 primary accounts are: Organization Expenses, General Officers and Clerks, Law, Stationery and Printing, Taxes, Interest during Construction, and Other Expenditures–General.

OPERATING EXPENSES.—Classification of Operating Expenses provides for 8 general and 198[2] primary accounts "designed to show expenses of furnishing transportation service" and service incident thereto.

General accounts **Maintenance of Way and Structures** and **Maintenance of Equipment** carry cost of repair and loss through depreciation of property devoted to railway operations. The first is subdivided into 8 primary accounts, including, for example: Roadway Maintenance, Roadway–Depreciation, Rails,[3] Rails–Depreciation, Station and Office Buildings,[3] Station and Office Buildings–Depreciation. The second is subdivided into 60 primary accounts, including, for example: Steam Locomotives–Repairs, Steam Locomotives-Depreciation, and Steam Locomotives–Retirements.

General account **Traffic** carries costs of marketing the service of the railway organization in 9 primary accounts, including, for example: Advertising, Traffic Associations, Industrial and Immigration Bureaus.

General accounts **Transportation-Rail Line** and **Transportation-Water Line** carry cost of transporting persons and property by rail and water, the first in 50, the second in 3, primary accounts, covering: salaries and wages of transportation-employees; fuel and other operating supplies; telephone, telegraph, and signal operation; damages to persons or property transported; etc.

General account **Miscellaneous Operations** carries costs of activities incident to performance of transportation service in 6 primary accounts: Dining and Buffet Service, Hotels and Restaurants, Grain Elevators, Stockyards, Producing Power Sold, and Other Miscellaneous Operations.

General account **General** carries cost of a general character, applicable to the railway organization as a whole, in 12 primary accounts, including, for example: Salaries and Expenses of General Officers, Law Expenses, Insurance, Stationery and Printing.

General account **Transportation for Investment-Cr.** carries offsets to items charged elsewhere as expenses, representing costs of operation chargeable to investment accounts.

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[2] Including two accounts, Equalization–Ways and Structures, and Equalization–Equipment, added to the 1914 classification by order effective Jan. 1, 1921.
[3] For repair charges.

OPERATING REVENUES.—Classification of Operating Revenues provides 4 general and 39 primary accounts "designed to show amounts of money which a carrier becomes entitled to receive from transportation and from operations incident thereto."

General accounts **Transportation-Rail Line** and **Transportation-Water Line** carry revenues from transportation of persons or property by rail or water, the first in 16, the second in 8 primary accounts, including, for example: Freight, Passenger, Excess Baggage, Mail, and Express.

General account **Incidental** carries revenues earned from activities incident to performance of transportation service in 13 primary accounts, including, for example: Dining and Buffet, Hotel and Restaurant, Parcel Room, Demurrage, and Storage.

General account **Joint Facility** has 2 primary accounts. **Joint Facility-Cr.** carries "the carriers proportion of revenue collected by others in connection with the operation of" joint facilities. **Joint Facilities-Dr.** carries "that proportion of revenue from the operation of joint" facilities, "which is creditable to other companies."

INCOME ACCOUNTS.—Classification of Income Accounts provides for 45 primary accounts (19 debit, 26 credit). Besides recording net gain (or loss) to carrier from operation of its transportation plant, these accounts record accruals of income and cost growing out of corporate financial relationship of a contractual nature, ownership of property which it does not operate, and use of properties which it does not own. Balance of these accounts constitutes net corporate income. The schedule below shows these accounts in detail.

Schedule of Income Accounts

Credits:
- Railway Operating Revenues
- Revenues from Miscellaneous Operations
- Hire of Freight Cars—Credit Balance
- Rent from Locomotives
- Rent from Passenger-Train Cars
- Rent from Floating Equipment
- Rent from Work Equipment
- Joint Facility Rent Income
- Income from Lease of Road
- Miscellaneous Rent Income
- Miscellaneous Non-Operating Physical Property
- Separately Operated Properties—Profit
- Dividend Income
- Income from Funded Securities
- Income from Unfunded Securities and Accounts
- Income from Sinking and Other Reserve Funds
- Release of Premiums on Funded Debt
- Contributions from Other Companies
- Miscellaneous Income

Debits:
- Railway Operating Expenses
- Railway Tax Accruals
- Uncollectible Railway Revenues
- Expenses of Miscellaneous Operations
- Taxes on Miscellaneous Operating Property
- Hire of Freight Cars—Debit Balance
- Rent for Locomotives
- Rent for Passenger-Train Cars
- Rent for Floating Equipment
- Rent for Work Equipment
- Joint Facility Rents
- Rent for Leased Roads
- Miscellaneous Rents
- Miscellaneous Tax Accruals
- Separately Operated Properties—Loss
- Interest on Funded Debt
- Interest on Unfunded Debt
- Amortization of Discount on Funded Debt
- Maintenance of Investment Organization
- Income Transferred to Other Companies
- Miscellaneous Income Charges
- Income Applied to Sinking and Other Reserve Funds
- Dividend Appropriations of Income
- Income Appropriated for Investment in Physical Property
- Stock Discount Extinguished through Income
- Miscellaneous Appropriation of Income

PROFIT AND LOSS ACCOUNTS.—Classification of Profit and Loss Accounts provides for 18 primary accounts designed to show appropriations

of surplus at the option of the corporation, and adjustments of surplus in recognition of income or loss items not applicable to current period. The balance of these accounts represents net current adjustment of balance sheet surplus. Arranged as debits and credits, the accounts included within this classification are given herewith.

Schedule of Profit and Loss Accounts

Credits:
- Credit Balance (at beginning of Fiscal Period)
- Credit Balance Transferred from Income
- Profit on Road and Equipment Sold
- Delayed Income Credits
- Unrefundable Overcharges
- Donations
- Miscellaneous Credits

Debits:
- Debit Balance (at beginning of Fiscal Period)
- Debit Balance Transferred from Income
- Surplus Applied to Sinking and Other Reserve Funds
- Dividend Appropriations of Surplus
- Surplus Appropriated for Investment in Physical Property
- Stock Discount Extinguished through Surplus
- Debt Discount Extinguished through Surplus
- Miscellaneous Appropriations of Surplus
- Loss on Retired Road and Equipment
- Delayed Income Debits
- Miscellaneous Debits

GENERAL BALANCE SHEET ACCOUNTS.—Classification of General Balance Sheet Accounts provides for 63 primary accounts designed to show assets and equities of the corporation. The first account in this classification is Investment in Road and Equipment, which controls the subsidiary accounts making up Classification of Investment in Road and Equipment. The Form of Balance Sheet Statement prescribed by the Commission shows these accounts in detail (Forms 1a, 1b.)

The Income Statement prescribed by the Commission is shown below in summary form:

Income Statement Items

OPERATING INCOME:
- Railway operating revenues
- Railway operating expenses
  - Net revenue from railway operations
- Railway tax accruals
- Uncollectible railway revenues
  - Railway operating income
- Revenues from miscellaneous operations
- Expenses of miscellaneous operations
  - Net revenue from miscellaneous operations
- Taxes on miscellaneous operating property
  - Miscellaneous operating income
    - TOTAL OPERATING INCOME

NON-OPERATING INCOME:
- Total non-operating income
  - GROSS INCOME

DEDUCTIONS FROM GROSS INCOME:
- Total deductions from gross income
  - NET INCOME

DISPOSITION OF NET INCOME:
- Total appropriations of income
- Income balance transferred to Profit and Loss

ACCOUNTING PRACTICES.—The accounting rules governing use of classifications are significant. They constitute an important feature of Interstate Commerce Commission accounting regulation.

ACCOUNTING FOR DEPRECIATION.—Prior to establishment of the uniform system of accounts, railroad corporations accounted for maintenance of their properties by current charges for repairs and by charging replacements to operations. Replacement rather than abandonment was recognized as the basis for the charge, and accounting for maintenance was subordinated to the renewals policy.

The uniform system of accounts provides for definite depreciation accounting practice. For equipment this practice is prescribed. For ways and structures, to which it was applied in 1914, it is optional. Depreciation, i.e., loss in value of property units for which repairs cannot compensate, is an operating expense. It should be provided for out of current revenues, spread over the life of the property, and charged on a monthly basis. A depreciation reserve account, **Accrued Depreciation-Equipment,** is credited. Depreciation charges with respect to any unit of equipment "shall cease when the difference between the ledger value and the estimated scrap value shall have been credited to the accrued depreciation account."

Determination of the depreciation rate is left to the carrier's judgment, although statements as to bases of calculation are required in the annual report. Since 1916 carriers have been required, in certain instances, to justify rates used. The Commission's regulations have not accomplished the desired uniformity in depreciation accounting. Carriers have charged from 1% to 6% depreciation on equipment. In 1921 equipment depreciation rates used by several large trunk line railways ranged from 2% to 4%, based on estimated service life of 25 to 50 years. In compliance with provisions of the Transportation Act of 1920 that it shall "as soon as practical, prescribe, ... the classes of property for which depreciation charges may properly be included under operating expenses and **the percentages of depreciation which shall be charged** with respect to each of such classes . . . . ," the Commission has recently considered the question anew.

ABANDONMENTS.—When equipment or fixed improvements are retired and replaced, the appropriate property account is credited with "ledger value" of item retired. Charges are made concurrently to Accrued Depreciation account for **balance therein applicable to the unit retired** and to appropriate asset accounts for amount of salvage and insurance. In case of fixed improvements, remainder plus cost of demolition is charged to appropriate repair account. In case of equipment, remainder plus cost of demolition is charged to Profit and Loss, for depreciation applicable to periods prior to July 1, 1907, and to the appropriate retirement (operating expense) account. Application of this rule requires property records in such detail that the reserve cannot be charged for more or less than amount actually reserved for retirement of this identical property unit. If authorized by the Commission, any large item representing retirements of fixed improvements can be charged to Profit and Loss or to a suspense account, **Property Abandoned Chargeable to Operating Expenses.** When fixed improvements are retired and not replaced the charge is to Profit and Loss instead of Operating Expense.

ACCOUNTING FOR ADDITIONS AND BETTERMENTS.—Additions and betterments were originally provided for in a separate classification. In 1914 they were merged with original construction and equipment costs in the Classification of Investment in Road and Equipment, although the records must be so kept that original costs and subsequent expenditures for additions and betterments can be reported separately.

200A. COMPARATIVE GENERAL BALANCE SHEET—ASSET SIDE.

For instructions covering this schedule, see the text pertaining to General Balance Sheet Accounts in the Uniform System of Accounts for Steam Railway Corporations. The entries in this balance sheet should be consistent with those in the supporting schedules on the pages indicated. The entries in the short column (b_2) should be deducted from those in column (b_1) in order to obtain corresponding entries for column (c). All credit entries hereunder should be in red ink. The making of entries in column (d) is optional.

Line No.	Balance at beginning of year. (a)	Item. (b)			Schedule No.	Balance at close of year. (c)	Net change during year. (Increase in black, decrease in red.) (d)
1	$ c.	INVESTMENTS.				$ c.	$ c.
2		(701) Investment in road and equipment (p. 203).	(b_1) Total book assets at close of year.	(b_2) Respondent's own issues included in (b_1).	211		
3		(702) Improvements on leased railway property (p. 203).			211		
4		(703) Sinking funds (p. 210).			214		
5		(704) Deposits in lieu of mortgaged property sold (p. 211).			216		
6		(705) Miscellaneous physical property (p. 207).			212		
7		(706) Investments in affiliated companies:					
8		(A) Stocks,					
9		(B) Bonds,					
10		(C) Notes,					
11		(D) Advances (p. 218),			220		
12		(707) Other investments:					
13		(A) Stocks,					
14		(B) Bonds,					
15		(C) Notes,					
16		(D) Advances (p. 218),			220		
17		(E) Miscellaneous,					
18		Total investments,					
19		CURRENT ASSETS.					
20		(708) Cash,					
21		(709) Demand loans and deposits,					
22		(710) Time drafts and deposits,	(b_1) Total book assets at close of year.	(b_2) Respondent's own issues included in (b_1).			
23		(711) Special deposits (p. 211),			216		
24		(712) Loans and bills receivable (p. 218),			223		

25		(713) Traffic and car-service balances receivable,			
26		(714) Net balance receivable from agents and conductors,			
27		(715) Miscellaneous accounts receivable,			
28		(716) Material and supplies,			
29		(717) Interest and dividends receivable,			
30		(718) Rents receivable,			
31		(719) Other current assets,			
32		Total current assets,			
33	• • • • • • •	DEFERRED ASSETS.			
34		(720) Working fund advances,	(b₁) Total book assets at close of year.	(b₂) Respondent's own issues included in (b₁).	• • • • • • • • • • • • •
35		(721) Insurance and other funds (p. 220),			
36		(722) U. S. Government deferred assets (p. 219),		236	
37		(722) Other deferred assets,		230	
38		Total deferred assets,			
39	• • • • • • •	UNADJUSTED DEBITS.			
40		(723) Rents and insurance premiums paid in advance,			• • • • • • • • • • • • •
41		(724) Discount on capital stock,			
42		(725) Discount on funded debt,			
43		(726) Property abandoned chargeable to operating expenses,			
44		(727) U. S. Government unadjusted debits (p. 219),			
45		(727) Other unadjusted debits (p. 218),	Par values of holdings at close of year.	233	
46	• • • • • • •	(728) Securities issued or assumed—Unpledged,		228	
47	• • • • • • •	(729) Securities issued or assumed—Pledged,			• • • • • • • • • • • • •
48		Total unadjusted debits,			• • • • • • • • • • • • •
49		GRAND TOTAL,			

FORM 1a. Form of Balance Sheet Statement for Steam Railways, prescribed by Interstate Commerce Commission

200L. COMPARATIVE GENERAL BALANCE SHEET—LIABILITY SIDE.

For instructions covering this schedule, see the text pertaining to General Balance Sheet Accounts in the Uniform System of Accounts for Steam Railway Corporations. The entries in this balance sheet should be consistent with those in the supporting schedules on the pages indicated. The entries in the short column (b_2) should be deducted from those in column (b_1) in order to obtain corresponding entries for column (c). All debit entries hereunder should be in red ink. The making of entries in column (d) is optional.

Line No.	Balance at beginning of year (a)	Item (b)	(b_1) Total book liability at close of year.	(b_2) Respondent's holdings included in (b_1).	Schedule No.	Balance at close of year. (c)	Net change during year. (Increase in black, decrease in red.) (d)
	$ c.					$ c.	$ c.
1	• • • • • • •	STOCK.				• • • • • • •	• • • • • • •
2	• • • • • • •		(b_1) Total book liability at close of year.	(b_2) Respondent's holdings included in (b_1).		• • • • • • •	• • • • • • •
3		(751) Capital stock (p. 224),			251		
4		(752) Stock liability for conversion (p. 225),			252		
5		(753) Premium on capital stock,					
6		Total stock,					
7	• • • • • • •	GOVERNMENTAL GRANTS.				• • • • • • •	• • • • • • •
8		(754) Grants in aid of construction,					
9	• • • • • • •	LONG-TERM DEBT.				• • • • • • •	• • • • • • •
10	• • • • • • •		(b_1) Total book liability at close of year.	(b_2) Respondent's holdings included in (b_1).		• • • • • • •	• • • • • • •
11		(755) Funded debt unmatured (p. 226),			261M		
12		(756) Receiver's certificates (p. 229),			262		
13	• • • • • • •	(757) Nonnegotiable debt to affiliated companies:	• • • • •	• • • • •			
14		(A) Notes (p. 230),			263		
15		(B) Open accounts (p. 230),			263		
16		Total long-term debt,					
17	• • • • • • •	CURRENT LIABILITIES.				• • • • • • •	• • • • • • •
18		(758) Loans and bills payable (p. 235),			271		
19		(759) Traffic and car service balances payable,					
20		(760) Audited accounts and wages payable,					
21		(761) Miscellaneous accounts payable,					
22		(762) Interest matured unpaid,					
23		(763) Dividends matured unpaid,					
24		(764) Funded debt matured unpaid (p. 235),			275*		

25					(765) Unmatured dividends declared,									
26					(766) Unmatured interest accrued,									
27					(767) Unmatured rents accrued,									
28					(768) Other current liabilities,									
29					Total current liabilities,									
30	• •	• •	• •	•	DEFERRED LIABILITIES.		• •	• •	• •	•	•	• •	• •	•
31					(769) Liability for provident funds,									
32					(770) U. S. Government deferred liabilities (p. 219),	230								
33					(770) Other deferred liabilities,									
34					Total deferred liabilities,									
35	• •	• •	• •	•	UNADJUSTED CREDITS.		• •	• •	• •	•	•	• •	• •	•
36					(771) Tax liability,									
37					(772) Premium on funded debt,									
38					(773) Insurance and casualty reserves,									
39					(774) Operating reserves (p. 235),	281								
40					(775) Accrued depreciation—Road (p. 238),	286								
41					(776) Accrued depreciation—Equipment (p. 238),	286								
42					(777) Accrued depreciation—Miscellaneous physical property (p. 238),	285								
43					(778) U S Government unadjusted credits (p. 219),	233								
44					(778) Other unadjusted credits (p. 235),	286								
45					Total unadjusted credits,									
46	• •	• •	• •	•	CORPORATE SURPLUS.		• •	• •	• •	•	•	• •	• •	•
47					(779) Additions to property through income and surplus,									
48					(780) Funded debt retired through income and surplus,									
49					(781) Sinking fund reserves,									
50					(782) Miscellaneous fund reserves,									
51					(783) Appropriated surplus not specifically invested,									
52					Total appropriated surplus,									
53					(784) Profit and loss † balance,									
54					Total corporate surplus,‡									
55					GRAND TOTAL,									

* Excludes $ matured funded debt held by or for respondent and not canceled.

FORM 1b. Form of Balance Sheet Statement for Steam Railways, prescribed by Interstate Commerce Commission—(*Continued*)

Additions are additional facilities such as tracks, buildings, bridges, equipment; and additions, or devices added, to facilities already in existence, as, additional ties in an existing track, air brakes, etc.

Betterments are "improvements in existing facilities through the substitution of superior parts for inferior parts retired," as, substitution of steel-tired for cast wheels and 90 lb. for 70 lb. rails.

The Uniform System of Accounts provides that additions and betterments should be charged to capital, that "all the cost of maintenance and not more than the cost of maintenance" should be charged to operations. Prior to 1907 no uniformity existed in accounting methods for maintenance and improvements. Formal depreciation accounting was not practiced. The problem received consideration only when retired units were replaced. Although replacements were sometimes charged to capital, maintenance was recognized as operating cost.

The Commission holds that any expenditure reflecting an increase in carrier's investment in property is a legitimate charge to capital, but adopts a compromise policy in its accounting rule. It specifies that cost chargeable to investment in road and equipment "is the excess cost of new parts over the cost at current prices of new parts of the kind retired." Both physical and value aspects of the problem receive consideration. Cost is the basis for measurement of improvement but it is cost in excess of **cost of replacement in kind.** The Commission also rules that "if the total cost of additions and betterments to any class of" property "(except additional, or extension of, tracks), under a general plan, considered as a whole, is less than $100, the amount" shall be charged to Operating Expenses.[4]

DISCOUNT ON SECURITIES.—Investment accounts, prior to 1907, often carried value of investment in road and equipment at a figure approximating par value of securities issued therefor. Present classifications provide that discount on capital stock or discount and expense on funded debt shall not be "included in any account as a part of the cost of acquiring any property, tangible or intangible," except that portion of debt discount which, under a general program of amortization, is applicable to construction period.

Discount on stock can be extinguished, (1) by premiums realized on subsequent sales of same subclass of stock; (2) by assessments levied on stockholders; (3) by appropriations of income or surplus for that purpose; or (4) by charges to Profit and Loss upon reacquirement of stock. **Premium on stock** can be extinguished, (1) by discounts suffered on sales of same subclass of stock, or (2) by credits to Profit and Loss upon reacquirement of stock. Debt discounts and premiums are extinguished by annual charges or credits to the income accounts, **Amortization of Discount on Funded Debt** and **Release of Premiums on Funded Debt,** although carriers are allowed the option of extinguishing the whole debt discount through charges to Profit and Loss and deferring extinguishment of debt premium until maturity of the debt.

EQUALIZATION OF EXPENSES.—Equalization of maintenance expenses in accord with a budget of expenditures adopted for the year is provided for by two primary maintenance expense accounts, **Equalization-Ways and Structures,** and **Equalization-Equipment,**[5] and operating reserve accounts,

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[4] Made effective Jan. 1, 1921. In the 1914 classifications this practice was optional for charges less than $200.

[5] Both added in 1921.

Equalization Reserve-Ways and Structures, and **Equalization Reserve-Equipment.** Use of these accounts is optional. When amount actually expended for maintenance during any month is less than the equalized portion of proposed expenditures, the difference is charged to the expense account, Equalization-Equipment, or Equalization–Ways and Structures, and credited to Equalization Reserve–Equipment, or Equalization Reserve-Ways and Structures, as case may be. When amount actually expended is more than the equalized portions of proposed expenditures, difference is charged to the equalization reserve account and credited to the expense account. Credit balances in reserve accounts may be carried over from one year to another but under no circumstances may debit balances be so carried over.

COST ACCOUNTING FOR RAILWAY OPERATIONS.—Whether or not cost, as determined by application of cost accounting methods, is a proper basis for the charge for a particular transportation service, cost analysis contributes to the solution of problems now before the commissions. Division of operating expenses between freight and passenger service is the limit to which cost accounting analysis has been carried in practice. A plan for such a division of expenses can be formulated in detail only after careful analysis of operating conditions and relationship between each item of expense and services performed. Two such systems have been in use for some time, employed, respectively, by the Pennsylvania Railroad Co. and the Oklahoma Corporation Commission. Independent analyses have frequently been made in connection with specific issues before commissions.

The Interstate Commerce Commission, on July 1, 1915, prescribed its "Rules governing the Separation of Operating Expenses between Freight Service and Passenger Service." Suspended during the war, these requirements were again put in force on Jan. 1, 1920. The Commission specifies that each operating expense shall be classified as it relates, (a) solely to freight service, or (b) solely to passenger and allied services, or (c) in common to both freight and passenger and allied services, or (d) to neither freight nor passenger and allied services. Appropriate subaccounts to provide for this classification are set up under each of the primary operating accounts of the carrier. The results of such classification shall be shown in the annual reports made by each such carrier to the Interstate Commerce Commission. Rules for division of expenses common to both services are prescribed. Maintenance of signals and interlockers, for example, is to be apportioned on basis of transportation service locomotive miles, dispatching trains expense on basis of transportation train miles, fuel for mixed train locomotives on basis of car miles, superintendence (equipment) on basis of apportionment of certain directly assignable expenses.

MISCELLANEOUS PROVISIONS.—The Commission specifies that accounting for expenses and revenues "shall be as nearly as practicable on the basis of accruals," that "accounts shall be written up, posted to the general ledger, and balanced monthly," and that final entries for a month must be made within 60 days.

Classifications provide for an investment account, **Interest during Construction.** To this account is charged interest paid on bonds during construction period, also reasonable charges for interest on carrier's own funds expended for construction purposes.

Classifications do not sharply define disposition of income and appropriations of surplus. At least five important items may be charged either

to Income or Profit and Loss, namely: dividend appropriations; extinguishment of stock discount; extinguishment of debt discount; appropriations for investment in physical property; and appropriations to sinking and other reserve funds.

Primary classification of operating expenses is an approach to job cost analysis. The account **Rails** (maintenance of rails), for example, carries the cost of labor, materials and supplies, work train service, floating equipment work service, special machine service, etc., used in the repair of rails.

ADMINISTRATION OF ACCOUNTING REGULATION.—The accounting regulations of the Commission are prescribed by order to the railway accounting officers who, by specific enactment, are held "personally responsible for the enforcement of the accounting rules laid down." Besides the formal classifications and the "general" and "special" instructions in connection therewith, accounting bulletins, issued from time to time, communicate the Commission's interpretations of classifications and approved accounting practices.

The Commission has exercised its authority "to inspect and examine any and all accounts, records, and memoranda," including correspondence of carriers, although in recent years it has not done much in the way of auditing accounts of individual carriers. The Commission requires an annual report, monthly reports of railway operating income by general accounts, as well as numerous other reports of matters other than accounting. In 1921 a total of 88 reports of an accounting or other statistical nature were required by the Interstate Commerce Commission. The **annual report** is an elaborate document, containing balance sheet, income sheet, and approximately 90 schedules of an accounting, financial, or operating statistical character. The schedules give detailed information as to control, capitalization, indebtedness, income, surplus, dividend appropriations, and reserves of the corporation; also as to ownership, improvement, operation, lease, depreciation, retirement, replacement, maintenance of, and investment in, property. The annual report for year ending Dec. 31 is due Mar. 31.

The Interstate Commerce Commission exercises jurisdiction over practically all phases of railway accounting. Although it does not usually concern itself with the ordinary routine of internal accounting procedure, the scope of its examinations is broad enough to cover all practices from origin to destination. Effectiveness of commission regulation of railway accounts is assured by the active co-operation of the railway accounting officers through the Railway Accounting Officers Association. Present standardization of internal accounting procedure is the outgrowth of years of endeavor on the part of accounting officers to prescribe, for themselves, uniform practices and standard forms by which to record the business of transportation and its financial results. "Railway Accounting Procedure," published by the Railway Accounting Officers Association, presents in detail the comprehensive body of rules and forms, some mandatory, some recommendatory, governing joint business of carriers where interline movements are involved.

In connection with the classifications, the Commission provides that carriers may subdivide any primary account; may make assignment of the amount therein to operating divisions, to its individual lines or to states; "may keep any temporary or experimental accounts for revenues or expenses, the purpose of which shall be to develop the efficiency of operations," provided in each case that such action does not impair the integrity of the accounts prescribed.

Accounting Regulation by the States

JURISDICTION OF STATE COMMISSIONS.—Most state commissions exercising regulatory powers over public utility corporations are authorized (in some cases required) to prescribe uniform systems of accounts for utilities under their jurisdiction, to examine accounts and other records, and to require such reports as may be necessary to insure proper performance of their functions. An effective administrative supervision of gas and electric companies, as of railroads, can be exercised only on the basis of facts furnished by adequate accounting records.

In 43 states, commissions have been granted authority to regulate accounting practices. In 43 states, commissions have been authorized to "prescribe" uniform systems of accounts, usually with the complementary power to examine and require reports. The authorizing section of the law usually states or implies that no other system of accounts shall be kept, although this does not prevent a company from keeping of special records for its own use and information.

Some commissions have jurisdiction over all public utilities; the jurisdiction of others is limited. At present, in 47 states, there are 14 public service commissions, 11 public utility, 12 railroad, 5 corporation, 2 railroad and public utility (and 4 others) exercising jurisdiction over railroads and/or public utilities (understood as all utilities except railroads) and/or so-called local utilities. The jurisdiction of the Iowa commission with relation to accounts is limited to railroad and express companies; the Michigan commission to telephone, gas, and electric companies; whereas the Oklahoma commission has jurisdiction over steam and electric railways, sleeping car, pipe line, gas, electric, water, telephone, telegraph, express, and automotive companies.

Steam and electric railways, certain other transportation agencies, and telephone and telegraph companies, engaged in both state and interstate business, have a dual responsibility—to the state commission on the one hand and to the Interstate Commerce Commission on the other. To avoid conflict of authority and duplication of effort which might result from independent exercise of regulatory power, many state commissions have been instructed to accept the accounting rules of the Interstate Commerce Commission for these utilities. The New York Public Service Commission Law, for example, specifies that "the system of accounts established by the commission and the forms of accounts, records and memoranda prescribed by it . . . . shall conform in the case of railroad corporations as nearly as may be to those from time to time established and prescribed by the Interstate Commerce Commission." The Michigan statute conferring authority over telephone companies specifies that "no such regulation shall be in duplication or in addition to any regulation . . . . made by the Government of the United States." Where not so instructed, most commissions have recognized the advisability of such procedure, particularly in case of steam and electric railways. State commissions now exercise, independently, little authority over accounts of steam railways. With few exceptions they have adopted the Interstate Commerce Commission's classifications for electric railways.

In 38 states, commissions have been granted authority to regulate accounting practices of telephone companies; in 35 states, telegraph companies. But state commissions make their distinctive contribution to the regulation of accounts in connection with local utilities. In 35 states, commissions

have been authorized to regulate accounting practices of gas companies; in 35 states, electric companies; in 32 states, water companies; and in 21 states, certain automotive companies. Various other enterprises such as toll bridges, water carriers, warehouse, messenger and signaling, heating and refrigerating, and natural gas companies, are brought within the jurisdiction of certain commissions.

EXERCISE OF JURISDICTION.—In 31 states, systems of accounts have been prescribed for telephone companies; in 16 states, the Interstate Commerce Commission classifications as such have been prescribed by law or adopted by the commissions. In 27 states, commissions have prescribed systems of accounts for gas companies; in 31 states, for electric companies; in 21 states, for water companies; and in 5 states, for automotive companies.[6] Under an act of Congress, approved in 1909, the Interstate Commerce Commission promulgated a system of accounts for gas and electric companies in District of Columbia. This system is still in use and has been adopted by at least one state, Georgia. Practically every uniform system of accounts prescribes a definite depreciation accounting practice. The commissions of 42 states require annual reports; the commissions of 13 states require monthly reports.

CLASSIFICATION OF UTILITIES.—A uniform system of accounts for local utilities must meet requirements of companies of various sizes. This is usually accomplished by classifying utilities on the basis of operating revenues and providing successive subdivisions of operating expense accounts for use of the larger classes. These classes, usually three or four in number, depend upon the size of the utility interests in the state. Electric utilities in New York and New Hampshire are classified on basis of operating revenues as follows:

New York		New Hampshire	
Class	Revenues	Class	Revenues
1st	In excess of $500,000	A	In excess of $50,000
2nd	$100,000 to $500,000	B	$20,000 to $50,000
3rd	$25,000 to $100,000	C	$3,000 to $20,000
4th	Less than $25,000	D	Less than $3,000

The New York classifications for the 1st class call for 94 operating expense accounts; 2nd class, 60; 3rd class, 44; 4th class, 43.

UNIFORM SYSTEMS OF ACCOUNTS.—The uniform systems of accounts prescribed for gas and electric companies by the Massachusetts Department of Public Utilities and the New York Public Service Commission represent standard practice. The New York systems have been thoroughly tested in large industrial communities. The Massachusetts systems, originally adopted in 1886 and 1887, were revised recently in conformity with present tendencies toward standardization.

MASSACHUSETTS SYSTEMS.—The complete classifications for gas companies, including expense accounts for Class A utilities (with operating revenues in excess of $200,000), are shown below:

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[6] Not included in the above are the systems of accounts now in preparation by the Alabama Public Service Commission for telephone, gas, electric, and water companies.

Schedule of Balance Sheet Accounts

Asset Accounts

INVESTMENTS:
- Plant Investment
- General Equipment
- Unfinished Construction
- Miscellaneous Physical Property
- Other Investments

CURRENT ASSETS:
- Cash
- Special Deposits
- Notes Receivable
- Accounts Receivable
- Interest and Dividends Receivable
- Materials and Supplies
- Other Current Assets

RESERVE FUNDS:
- Sinking Funds
- Insurance and Other Funds

PREPAID ACCOUNTS:
- Prepaid Insurance
- Prepaid Interest
- Other Prepayments

UNADJUSTED DEBITS:
- Discount on Bonds
- Property Abandoned
- Other Unadjusted Debits

Liability Accounts

CAPITAL STOCK:
- Common Stock
- Preferred Stock
- Employees' Stock

PREMIUM ON CAPITAL STOCK:
- Premium on Capital Stock

BONDS AND COUPON NOTES:
- Bonds
- Coupon Notes

CURRENT LIABILITIES:
- Notes Payable
- Accounts Payable
- Consumers' Deposits
- Matured Interest Unpaid
- Dividends Declared
- Other Current Liabilities

ACCRUED LIABILITIES:
- Tax Liability
- Interest Accrued
- Other Accrued Liabilities

UNADJUSTED CREDITS:
- Premium on Bonds
- Other Unadjusted Credits

RESERVES:
- Insurance and Casualty Reserve
- Depreciation Reserve
- Other Reserves

APPROPRIATED SURPLUS:
- Sinking Fund Reserves
- Miscellaneous Fund Reserves

PROFIT AND LOSS:
- Profit and Loss—Balance

Schedule of Plant Investment and General Equipment Accounts

INTANGIBLE PROPERTY:
- Organization
- Miscellaneous Intangible Investment

TANGIBLE PROPERTY:
- Lands
- Structures

GAS PRODUCTION EQUIPMENT:
- Boiler Plant Equipment
- Engines
- Miscellaneous Power Plant Equipment
- Benches and Retorts
- Water Gas Sets
- Purification Apparatus
- Other Equipment at Works

TRANSMISSION AND DISTRIBUTION:
- Street Mains
- Services
- Consumers' Meters
- Consumers' Meter Installation

UTILIZATION EQUIPMENT:
- Street Lighting Equipment
- Consumers' Premises Equipment

UNDISTRIBUTED EXPENDITURES DURING CONSTRUCTION:
- Engineering and Superintendence
- Law Expenditures During Construction
- Interest During Construction
- Accidents and Damages During Construction
- Taxes During Construction
- Miscellaneous Expenditures During Construction

GENERAL EQUIPMENT:
- Office Equipment
- Shop Equipment
- Stores Equipment
- Transportation Equipment
- Laboratory Equipment
- Miscellaneous Equipment

Schedule of Income Accounts

OPERATING INCOME:
- Gas Operating Revenues
- Gas Operating Expenses
- Uncollectible Operating Revenue
- Taxes Assignable to Gas Operations

NON-OPERATING INCOME:
- Merchandise and Jobbing Revenue
- Rent from Gas Appliances
- Miscellaneous Rent Income
- Interest and Dividend Income
- Income from Sinking and Other Reserve Funds
- Amortization of Premium on Bonds
- Miscellaneous Non-Operating Income

DEDUCTIONS FROM GROSS INCOME:
- Miscellaneous Rents
- Interest on Bonds and Coupon Notes
- Miscellaneous Interest Deductions
- Amortization of Discount
- Miscellaneous Deductions from Income

Schedule of Profit and Loss Accounts

Credits:
- Credit Balance at Beginning of Fiscal Period
- Credit Balance Transferred from Income Account
- Miscellaneous Credits

Debits:
- Debit Balance at Beginning of Fiscal Period
- Debit Balance Transferred from Income Account
- Surplus Applied to Sinking Fund and Other Reserves
- Dividend Appropriations of Surplus
- Appropriations of Surplus for Depreciation
- Discount on Bonds Extinguished through Surplus
- Other Deductions from Surplus

Schedule of Operating Revenue Accounts

REVENUES FROM SALE OF GAS:
- Metered Sales to General Consumers
- Flat-Rate Sales to General Consumers
- Prepaid Gas Sales
- Sales to Other Gas Companies
- Municipal Street Lighting
- Miscellaneous Gas Revenues

REVENUES FROM MISCELLANEOUS GAS OPERATIONS:
- Steam Sales Revenue
- Rent from Property Used in Operation
- Miscellaneous Operating Revenues

Schedule of Operating Expense Accounts

PRODUCTION EXPENSES:

OPERATION
- Superintendence
- Boiler and Engine Room Labor
- Retort House Labor
- Generator House Labor
- Purification Labor
- Miscellaneous Labor at Works
- Boiler Fuel
- Water
- Power from Other Sources
- Fuel under Retorts
- Coal Carbonized
- Generator Fuel
- Water Gas Oil
- Purification Supplies
- Miscellaneous Works Expense

MAINTENANCE
- Maintenance of Works and Station Structures
- Maintenance of Power Plant Equipment
- Maintenance of Benches and Retorts
- Maintenance of Water Gas Sets
- Maintenance of Purification Apparatus
- Maintenance of Holders
- Maintenance of Other Equipment at Works
- Purchased Gas
- Residuals Produced—Credit
- Production Expenses Transferred—Credit

TRANSMISSION AND DISTRIBUTION EXPENSES:

OPERATION
- Superintendence
- Transmission and Distribution Operating Labor
- Fuel for Heating Outlying Holders
- Transmission and Distribution Supplies and Expenses
- Inspecting and Testing Meters
- Removing and Resetting Meters

MAINTENANCE
- Maintenance of Street Mains
- Maintenance of Services
- Maintenance of Consumers' Meters
- Maintenance of Distribution Holders
- Maintenance of Tools and Implements
- Maintenance of Miscellaneous Structures

Schedule of Operating Expense Accounts—(Continued)

Utilization Expenses:

Operation

Municipal Street Lamps—Labor
Municipal Street Lamps—Supplies and Expenses
Commercial Lamps

Maintenance

Maintenance of Municipal Street Lamps
Maintenance of Commercial Lamps and Equipment
Maintenance of Consumers' Installations

Commercial Expenses:

Commercial Salaries
Commercial Supplies and Expenses

New Business Expenses:

New Business Salaries
New Business Supplies and Expenses
Advertising
Piping and Appliances

General and Miscellaneous Expenses:

Salaries of General Officers
Salaries of General Office Clerks
General Office Supplies and Expenses
General Office Rents
Law Expense—General
Insurance
Relief Department, Pensions, and Welfare Work
Accidents and Damages
Store Expenses
Transportation Expenses
Inventory Adjustments
Maintenance of General Structures
Depreciation
Miscellaneous General Expenses
Gas Expenses Transferred—Credit

The balance sheet, plant investment and general equipment, operating revenue, and operating expense classifications are similar to the Interstate Commerce Commission classifications, but the line between income and profit and loss is more carefully drawn. Dividends are distributions chargeable to surplus. Profits retained to provide for extensions, additions, or betterments are appropriations of surplus.

The subtotals in the income account are significant. The total of operating revenues diminished by total of operating expenses, gives **net operating revenues (or loss)**. The net operating revenues (or loss) diminished by the amount of uncollectible revenues and taxes, gives **net operating income (or loss)**. The addition of **non-operating income** to net-operating income, gives **gross income.** The gross income diminished by the sum of the **deduction from gross income,** gives **net income (or loss)**, which balance is carried to Profit and Loss.

Provision for depreciation of plant is made by periodic charges to operating expense account, **Depreciation,** and the creation of a depreciation reserve for retirement of property. Such reserve can be created by charges to Profit and Loss also. Rates of depreciation are, for the present, determined by the utility, although the basis of calculation must be reported to the department. The maintenance accounts include charges for repairs only. The account, Depreciation, is classified under the general account, **General and Miscellaneous Expenses.**

The investment accounts are charged for "only such portion of betterments as will, when added to original cost of the property bettered, give the value of the property in its bettered condition." The remainder shall be "classed as a repair and charged to the appropriate operating expense accounts."

When property is **abandoned,** whether replaced or not, Plant Investment account is credited. Concurrently, salvage and insurance are recognized, and the balance, plus cost of demolition, is charged to Depreciation Reserve, up to the amount of the balance in that account, and to the profit and loss account, **Appropriations of Surplus for Depreciation.** Property retired as a result of a casualty and not provided for in Depreciation Reserve shall be

charged to the suspense account, **Abandoned Property,** and amortized in the future. No alternative charge to Profit and Loss is provided for.

Organization expenses are amortized within a reasonable period. Reserves set aside for definite and specific purposes can under no circumstances be diverted to any other use without consent of the Department. A company operating both gas and electric properties divides joint non-operating revenues and expenses on basis of respective gross operating revenues. Companies operating both gas and electric properties are required to keep separate gas and electric property accounts, but are not required to keep separate balance sheet accounts (other than plant investment). Separate classifications are provided for gas and electric operating expense and revenue accounts.

NEW YORK SYSTEMS.—Schedules A and B constitute the balance sheet and income account classifications. Plant and equipment accounts are grouped under the subtitle, Fixed Capital, in the balance sheet classification. Schedule B, income account, consists of the revenue, expense, income, and profit and loss items. The text pertaining to the income account contains carefully drawn definitions of every phase of operating, financial, contractual, and ownership activity.

Provision for depreciation of plant is made by monthly charges to General Amortization, classified under General and Miscellaneous Expenses, and the creation of a reserve, Accrued Amortization of Capital. Rates of depreciation are determined by the utility. When capital exhausted is replaced by a unit of "substantially greater capacity," cost of replacing with a unit of same capacity is charged as replacement and the balance as betterment. Betterments involving partial destruction of thing bettered are provided for as in the Massachusetts rule. Cost of property retired, less salvage, is charged to Accrued Amortization of Capital, and necessary adjustments made in Corporate Surplus or Deficit.

STANDARD CLASSIFICATION.—A recent development in state control of public utility accounts is the attempt being made by the state public utility commissioners through the National Association of Railway and Utilities Commissioners, to standardize accounting rules and regulations. This association's Committee on Statistics and Accounts of Public Utilities, after a careful study of accounting requirements of local public utility control, has prepared uniform classifications of accounts for gas, electric, and water utilities. These standards of uniformity have been accepted by the association and recommended for adoption by state commissions.

These classifications represent middle ground of current practice. In several instances there is an alternative practice to permit adjustment to policy. Particularly is this true in connection with depreciation. A retirement reserve may be created by periodic charges to Operating Expense, or by charges to Profit and Loss, or both. The retirement reserve account is provided for equalizing retirement losses from year to year, **"but with due regard for amount of earnings available for this purpose in each year."** Cost of property retired, less salvage and insurance, is charged to "Retirement Reserve" up to the balance in that account. The balance is charged to "Property Abandoned," **or to other appropriate account.** Dividend distributions and appropriations to reserves are chargeable to Income or Profit and Loss. Such standardization leads to a more satisfactory basis for statistical analysis of operating and financial activities of local utilities as a class.

Public Utility Valuation

NECESSITY FOR VALUATION.—An important feature of public utility regulation is the valuation of public utility properties. The "fair value" of property used in serving the public is recognized by courts and commissions as the basis for determining reasonableness of rates, for regulation or capitalization, for taxation and public purchase. Discussion of "fair value" in relation to rates appeared in 1897 as dicta in *Smyth* v. *Ames*.[7] It was declared that "what the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience." This doctrine throws the burden, in rate-making, upon valuation.

VALUATION PROJECTS.—Several states have undertaken on a broad scale the valuation of public utility properties. A Michigan valuation of railway properties for purposes of taxation was made in 1900. This was followed by valuation projects in Minnesota, Wisconsin, Nebraska, and New Jersey.

In 1913 Congress authorized the Interstate Commerce Commission to value railway properties in the United States for purposes of regulation. This work is carried on through the Bureau of Valuation. The Transportation Act of 1920 requires that its results be accepted as prima facie evidence of value for purposes of administering the new rule of rate-making and the program of railroad consolidation.

VALUATION IS PURPOSIVE.—Valuations depend upon the purpose for which undertaken. Valuation for taxation is made to determine ability to contribute toward maintenance of government. Valuation for rate-making is made to determine proper compensation for services rendered rate-payers. Valuation for capitalization is made to test securities outstanding. Valuation for public purchase is made to determine proper compensation for private property.

VALUATION BASES.—Several bases have been proposed to determine "fair value." The Supreme Court in *Smyth* v. *Ames* proposed following elements of value: amounts expended in permanent improvements; market value of stocks and bonds; present as compared with original cost of construction; probable earning capacity; and amount necessary to cover operating expenses. Valuation Act of 1913 instructed the Interstate Commerce Commission to ascertain original cost to date, cost of reproduction new, cost of reproduction new less depreciation, and any other elements of value. Some elements proposed are inapplicable. The others represent three valuation bases: market value, actual investments, and present value determined independently of rates and earnings.

Market value cannot be directly determined because complex properties of this type do not enter the market. Two evidences of market value are relied upon—quotations on securities market, and capitalization of net earnings. Because of many things entirely divorced from value of property or its earning capacity, which affect securities quotations, the first of these methods is not reliable. Both figures depend so directly upon the monopolistic privilege and upon the prevailing level of rates, that market value as a basis for adjusting rates is inapplicable.

The other bases are: actual investment, and present value determined independently of rates and earnings. The most satisfactory evidence of actual investment is construction cost and betterment figures taken from an

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[7] 169 U. S. 466.

adequate system of accounting records, but usually such records are not available. Preregulation accounting records do not always disclose legitimate construction costs on a cash basis. It is necessary to accept property records as they stand or rely upon a physical valuation.

Physical valuation consists of a physical inventory of property units and application thereto of unit prices. Determination of actual investment (original cost) requires application of past price bases. Present value requires application of present price bases.

ACTUAL INVESTMENT.—Determination of original cost to date by method here proposed requires analysis of the origin and development of the property. To the specific property units now in existence are applied unit prices prevailing at time of their acquisition. Such prices are taken from contract or other records of the company, standard quotations, or any other available data covering cost of similar items elsewhere. This method is seldom used because of difficulty in finding reliable price data. The Bureau of Valuation has not been successful in determining **original cost to date** by this method.

COST OF REPRODUCTION.—Present value found by applying present price bases to a physical inventory assumes a hypothetical construction program. It is equivalent to cost of reproduction, the most generally accepted valuation figure. It is the most important element in the Interstate Commerce Commission's determination of final value.

Under the cost of reproduction method the engineer must assume conditions of construction. He is interested in cost of reconstructing the identical property under geographical and topographical conditions prevailing **at time of original construction.** In considering methods of construction, sources of supply of labor and materials, length of construction period, etc., he must adopt a reasonable procedure.

In railroad valuation the process of reversion to original conditions is described as follows: "The roadbed is assumed to disappear, and in place of the smoothed and well-tended grade the conditions met at the time of construction are restored. The right of way and terminal properties pass into private hands to be devoted to the same use as adjoining tracts. The equipment vanishes, the working force is scattered. The very corporate existence ceases."[8]

Elaborate field investigations are undertaken. Land is easily checked but ways and structures present a more difficult problem. Other railroads are assumed to exist to haul materials for reconstruction. Materials and labor are drawn from the most economical of present sources of supply. Present efficiency of labor is assumed. Materials, supplies, and services of persons or property which, at present, would be needed to reconstruct the property are inventoried in detail. Trackage is measured; yardage of cuts and fills and labor for track laying and surfacing are estimated. Team haul ahead of construction and transportation of workmen to and from point of construction are calculated. Buildings, bridges, and other structures are transformed into thousands of bricks, tons of steel, thousands of board-feet, barrels of cement, etc.

The field investigation completed, the next step consists in applying unit prices. Presumably unit prices prevailing during the hypothetical reconstruction period will be applied to the physical units required for reconstruction of roadway and structures. The Bureau of Valuation has applied the

[8] Homer B. Vanderblue in "Railroad Valuation."

average unit prices over a period of 5 years next preceding date of valuation, June 30, 1914.

Land values are determined by applying **unit prices** based upon "average market value" of adjacent tracts. These unit prices are drawn from, (1) results of special investigations of land values, or (2) tax assessment records, or (3) records of real estate transfers. To these figures, based upon the "normal market value" of adjacent tracts, is usually applied a multiple to cover additional costs of acquiring land for railway purposes. This multiple varies in different valuation projects from 10% to 400%. The use of such multiples was condemned in the *Minnesota Rate Case* and, although still defended by railway engineers, is not included in the Bureau of Valuation's cost of reproduction figure.

The third important element in physical reconstruction of the property is overhead expense of construction and acquisition. Items such as costs of materials inspection and cost of maintaining concentration yards for construction materials are provided for in unit prices for materials. But general charges for superintendence, engineering, promotion, legal services, and interest, taxes, and insurance during construction, are generally included within the reproduction cost total by the addition of a percentage of certain basic construction cost figures.

COST NEW LESS DEPRECIATION.—The most controversial problem in valuations is that of depreciation. It occurs in connection with both the original cost to date and cost of reproduction methods. If accrued depreciation is deducted from **original cost new to date,** a figure called "unimpaired investment" is obtained.[9] If from **cost of reproduction new,** the result is the **cost of reproduction new less depreciation** referred to in the Valuation Act. The utilities deny the legitimacy of such deduction. A "seasoned" plant property, adequately maintained to the proper standards of operating efficiency, they contend, is more valuable than a new plant ready for operation.

INTANGIBLES.—In addition to the physical valuation here described and certain allowances claimed for "contingencies" and "incidentals" which escape the eye of the valuation engineer, certain intangible items have been claimed by the utilities, and in some instances recognized by the courts, as elements in value of a public utility property. For the most part these items constitute what is called franchise value, going value, or developmental value. **Franchise value** represents value which attaches to a property because of the utility's franchise right to operate it for profits. **Going value** represents the value which attaches to a complex property, organized and operating for profit, with established business relations, which would not attach to the unorganized aggregate of property units. **Developmental value** represents sacrifices of investors in foregoing profits during early years of operation, while developing profitable business.

CRITIQUE.—Adjustment for **construction overhead** in cost of reproduction is not always based on fact. From 1% to 15% of other basic costs have been claimed for these items. In most state valuations 4% has been allowed.

Franchise value is the value of a public grant of monopolistic privilege and should not be construed against the public. Its value reflects earnings, and rates are in question. It has no place in valuation for rate-making. Going value represents a large number of important relationships which, doubtless, have a bearing on the success or failure of the business, but neither these

[9] Homer B. Vanderblue in "Railroad Valuation."

elements nor "profits foregone" constitute legitimate additions to **value of property.**

An **analysis of depreciation** in relation to public utility valuation must not be based on the "market value" analogy. Depreciation is a fact. Property units expire. A fully maintained plant property adequately meets service requirements. As income-bearing property it may be more valuable than when new. But depreciation of property units takes place before requirements of operating efficiency force replacement. Present **physical value status** of the property is dependent upon past depreciation, addition, and betterment policies, and upon past accounting for income. In valuation for rate-making, **value as a rate base** is sought, a figure on which the utility should be allowed to earn, and on which the public should be forced to pay. This value should be free from the influence of earning capacity. It may be that the utility should be allowed to earn on a figure representing undepreciated value, **but this has no bearing on value.** When value is sought, whether based on original cost or cost of reproduction, it should be depreciated value.

Original cost is difficult to ascertain and, if based on construction records, involves possibilities of subsidizing extravagant expenditure and of penalizing efficient construction methods It denies to the utility any element of "unearned increment," whereas cost of reproduction allows for it. Cost of reproduction relies upon assumption. In case of land, values produced in part by the railroad enter into the figure on which the utility should earn rates.

VALUATION IS AN ECONOMIC PROBLEM.—Whether actual investment or present value (cost of reproduction) should be accepted as the rate base, and what constitutes "fair return," involve economic, legal, and social considerations. Many factors must be considered to determine the correct policy. Conservative and economical management of construction and operation should be rewarded. Early losses in an industry where profits are limited by regulations should be compensated for. Utilities should not be penalized for shortcomings of past regulation; or for failure of past rate adjustments to cover operating expenses, **including depreciation** and a fair return. But these items should be "capitalized" in fair return; they do not form part of **value** of property. Either these items must be allowed for in the rate and the value figure remain a **value** figure, or value of property as a rate base must yield to "a figure which in view of the circumstances and conditions surrounding the construction and operation of the property will give justice and equity to the parties in interest."

SECTION 25

MUNICIPALITIES

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 25

MUNICIPALITIES

FUNCTION OF MUNICIPAL GOVERNMENT.—Municipal corporations are co-operative societies created to carry on, without profit, those functions of a public service nature necessary to protect life, health, and property of their members; and to provide and maintain, for use of their members, public institutions, buildings, structures, and improvements essential to the community's well-being.

The administration of their functions and activities is directed by salaried officials responsible to the municipality for proper administration of its affairs, and of the funds raised by taxation or by other methods, and entrusted to them to carry on the functions and activities of the municipality.

Out of the methods developed for providing and safeguarding such funds, have grown the present elaborate systems of municipal "funds," fiscal programs, and the various peculiarities of municipal fund and appropriation accounting. Much of the procedure is the outgrowth of the idea of the "internal check," and a desire to avoid responsibility, but is legally established and must be complied with.

ACCOUNTING PRINCIPLES.—Principles of business corporation accounting present the survival of the best in form and method, being the result of modern competitive conditions which require that accurate, detailed information be presented for purposes of efficient administration. Similar methods should prove advantageous to municipalities; yet in few cases is ordinary business expense accounting found in city offices.

Municipal Funds

FUND DEFINED.—A most essential requisite to the consideration of municipal accounting is an understanding of the term **municipal fund.** With municipalities, **fund** signifies a sum of money, or other resources, collected either from various miscellaneous sources **(general funds)**; from sale of financial obligations **(capital funds)**; from assessments against property **(special funds)**, etc., etc.—all to provide means to defray expenditures involved in connection with definitely specified activities or in attaining certain objects.

PROCEDURE.—A **formal procedure**, established by law, is employed by municipalities in establishing "funds," also in utilizing their resources.

Briefly, this formal procedure embraces **four principal steps;**

Establishment of the fund
Authorization of expenditure
Operation of funding
Operation of spending

Establishment.—Funds are created by legislative action, or by executive order, directing that certain receipts be gathered together and accounted for as special resources to be applied in carrying on designated activities.

Authorization.—Authorization to expend from a fund is, in general, an appropriation act of city council, directing that certain amounts be expended for certain purposes. In many cases, however, special funds created for special purposes are expended without further appropriation act because authority for expending is implied in the act by which the fund is established.

Operation of Funding.—This consists in collecting revenues, or money borrowed, gathering collections into treasury, and accounting for them by proper officials.

Operation of Spending.—This consists, (1) in encumbering the fund, or appropriation, by issue of contracts or purchase orders by responsible official; (2) approval of invoices by responsible official; (3) audit of invoice and preparation of a voucher by an auditing officer; (4) cancellation, by reversal of entry, of original encumbrance (see 1), and (5) payment of voucher by treasurer.

CLASSES OF MUNICIPAL FUNDS.—Under a prior caption, reference is made to some characteristic features of municipal "funds." Reference has also been made to the fact that all transactions entered into by a city have relation to the legal restrictions on expenditures and therefore to some one of the funds provided. It follows that through such legal restrictions, all municipal operations are financed from some fund. The funds are divided into **two main groups:**

1. General (or Current) Funds
2. Special Funds

The first of these groups is not further subdivided, but the second includes three distinct classes, viz.,

(a) Capital Funds
(b) Sinking Funds
(c) Special and Trust Funds

Nearly every city uses the name **general fund,** or similar term, to designate the fund the resources of which are available for any purpose to which the city legislative body chooses to apply them. Its resources are all those receipts which have not yet been, by law or agreement, applied to some special purposes and so are available for general purposes.

As direct opposite of general fund, **special fund** is used to designate all funds established to provide for some particularly specified expenditure or class of expenditures.

Object of establishing a special fund is, therefore, to insure provision of means for carrying on a particular activity or attaining a specified object either by diverting certain specified receipts from general resources, or providing funds through some other special means—as sale of bonds, or a special assessment for local improvements—proceeds of which may be used for no purpose other than the one specified.

Since resources of the various funds are provided for different purposes, accounting records must be maintained with a view to presenting resources and surplus of each fund separately from those of all others. This does not mean that the cash, for instance, of each fund shall be physically separated from the cash of all other funds; but fund accounts must be so maintained as always to indicate how much of total city cash and other resources each fund owns.

To carry out such requirements, it is essential that a completed **circle of fund accounts** for each fund be maintained. The accounting of a city must be developed to present the assets of the four principal classes of funds. The **main characteristics** of the four classes of funds are:

GENERAL FUND.—The general or current fund is that out of which most municipal current operating and maintenance obligations are met. Its resources are those receipts ordinarily appropriated to meet liabilities incurred in current administration and operation of city activities, and in general maintenance of properties and equipment during current period. Thus, while it is a going fund—always in existence—it is actually a fund of the current fiscal period. Its **revenues** are receipts from the yearly tax levy and from those other general and miscellaneous sources not given over by law to some special fund. Its **liabilities** are current obligations of the year which, in absence of other provisions, are to be paid from general resources. The larger number of budget appropriations are made from this fund and most of the detail accounting is in connection with this fund.

CAPITAL FUND.—Capital fund resources provide for construction work or other capital expenditures. It includes among its **resources** cash and other properties derived from proceeds of sales of bonds issued to provide for capital expenditure purposes, cash diverted from other funds, or that raised by special tax levies for capital expenditure purposes. Its **liabilities** are those incurred to carry out capital improvement programs undertaken, and outstanding capital bond issues.

SINKING FUNDS.—Sinking funds comprise cash and investments accumulated usually by annual increments contributed from general fund to redeem bonded indebtedness at maturity of the loan. **Liabilities** of the sinking funds are maturing bonds for redemption of which the funds have been created. In some cases bond interest is also paid from sinking funds.

SPECIAL AND TRUST FUNDS.—This class of funds includes all special purpose funds which the city holds and administers as trustee or special agent. They may be expendable in total for designated purposes, or only their incomes may be available for use by the city, according as deed of trust or authority by which they were created may specify. In many cases **annual estimates** of amounts available for city purposes and a **budget program** of expenditures and appropriations are required in greater or less degree as amount and purposes of available resources may determine. This class of funds also includes moneys which may come into hands of the municipality, to be applied for benefit of individuals, or ultimately to be returned to those from whom collected, or to their estate.

FINANCIAL STATEMENTS.—For each of these four separate classes of funds there are to be maintained accounts necessary to presentation of balance sheets supported by statements of income and expenditures.

DEVELOPMENT.—Formal establishment of these definite funds and funding of all receipts, as per legal requirements, are practices universally established by municipal corporations, for following reasons:

1. To safeguard resources of the fund.
2. To control amount of the expenditure.
3. To prevent obligating municipality for expenditures not legally authorized, or in excess of amount of resources provided.

As the natural consequence of such practices, and also of the fact that these requirements are legislative ones, the system of accounting known as

fund and appropriation accounting has, to within comparatively few years, been the only one developed by municipalities.

Fund and appropriation accounting aims at presenting essential information relating to the condition of a fund. It deals with cash receipts and cash expenditures; with disposition of fund resources and liabilities; and with administration of the fund in accordance with the authorization creating it.

It does not provide an **analysis of expenditure** and cannot furnish officials directing the activities of the municipality with the **classified information** furnished by a cost and expense classification of expenditure, essential and necessary to efficient management of private corporations.

Because of such inherent weaknesses in fund accounting, the only system ordinarily maintained by American municipalities, there has slowly developed an understanding that in addition to fund accounting, municipalities must also maintain proprietary and expense accounting, in order to know to what purpose their money is applied and to secure efficient management.

REQUIREMENTS OF MUNICIPAL ACCOUNTING.—While the general purpose of accounting is to provide **historical records** of financial affairs of an enterprise, with municipal corporations the record often is little more than one of receipts and disbursements of cash. As such it indicates only the honesty of officials charged with the duty of receiving and disbursing public funds.

In **municipal administration,** it is legally necessary to know primarily that officials are not spending more money than was appropriated, and that money is being spent only for purposes specified. For this reason the principal end of appropriation accounting has been to indicate whether or not such is the case. Under modern conditions, however, accounting should do more than merely prove or disprove honesty. If the historical record is written in accordance with modern accounting practice, it should display **all facts** regarding municipal administration in a broad and comprehensive way so as to enable one to judge quantity and value of the work done; also to provide information whereby the executive can judge results of the past and plan and prepare for the future.

The **completed municipal accounting system** presents two separately balanced groups or circles of accounts, both of which deal with the same receipts and expenditures. The **two circles** are:

1. Fund and Appropriation Accounts
2. Proprietary and Expense Accounts

Fund and appropriation accounting deals with resources and liabilities of municipal funds; with the budget; appropriation ordinances; estimated revenues and expenditures; actual revenue receipts and the expenditures incurred. This is the accounting now universally in use. **Proprietary and expense accounting** deals with financial and operating activities of the municipality in a manner similar to that in use among business corporations. Fund accounting for governmental corporations is required by law. Proprietary and expense accounting is not, but it is as necessary to efficient administration of city activities as is fund accounting to control of funds. Necessity of the two circles of accounts arises from the different purposes achieved by each.

Since municipal corporations must ordinarily obtain funds to carry on their activities, by assessing their citizens for larger part of costs of operation, they must raise their funds by legally instituted methods and for definite purposes; and the law requires that these funds be controlled and administered separately.

To control funds so raised and activities of officials in administering them, and to insure that funds be expended only for purpose for which raised, **appropriation accounting** has been instituted and developed, but to the almost complete exclusion of **expense accounting.**

Estimates of expected revenues and proposed expenditures are made before or at beginning of each fiscal period, or soon thereafter: and after more or less deliberation, an ordinance, or ordinances, is passed by the city's legislative body authorizing expenditure of definite amounts for specific purposes named in appropriation ordinances in greater or less detail. (See under "Budget.")

On authority of the appropriation ordinances, appropriation accounts must be opened, with each separately named "title" contained therein. To each of such accounts is credited amount of money which may be expended under the title represented by the account. Against some one of the appropriation accounts so set up, each item of expenditure must be charged, thereby decreasing total amount remaining unexpended. If actual expenditure of year equals the appropriation, the account closes with no balance. In brief, the purpose of appropriation accounting is to compare actual with authorized expenditure—and it serves no administrative need beyond revealing whether or not there are any amounts yet to be expended (which may be one reason why it is so well developed).

Appropriation accounting does not distinguish between plant investment and operating expenses except as the appropriation itself is made expressly for one or the other. Purchases for stores are charged, ordinarily, directly against the appropriation providing the funds to make the purchase, regardless of when, where, or for what purpose the material or supply is used.

A purchase of coal or labor must be charged to the appropriation containing the funds provided for making such purchases, which is the end of it; but in business accounting, coal is an asset to be charged to expense only as consumed and pay-roll is distributed and charged against many accounts which may be of either a capital or expense classification. Hence the need of proprietary and expense accounting in addition to fund accounting, if information is desired from accounts. Moreover, appropriation ordinances cannot be made to follow successfully the lines of an **expense classification,** which is further proof that limitations set up in appropriation accounting prevent obtaining from it the information which business corporations require

The Budget

PREPARATION OF BUDGET ESTIMATES.—In city hall circles principal item of interest, near the end of any fiscal period, is preparation of the budget for the next year; and in practice the budget becomes a starting point for municipal activities, including accounting Since money may not be expended except as appropriated, and since it cannot be expended except as provision is made for obtaining funds to be expended, it is necessary to include in the budget estimates of revenues that will probably be collected, as well as estimates of hoped-for expenditures.

These two classes of estimates prepared by the departments upon executive order for consideration of the city council, however complete or incomplete, constitute the report designated as **the budget,** by the aid of which the council passes an **appropriation ordinance** providing funds for continuing city activities and operations.

FORM OF BUDGET.—There is much controversy over the proper **form of a budget.** There is the **lump sum budget, segregated budget,** and **func-**

tional budget. Much of the controversy is due to the fact that it is quite customary to enact the budget as an appropriation ordinance without modification. The budget, however, is merely a request for funds, with an estimate of amount required and purpose thereof. These estimates, or the budget, may be as detailed and in such forms as desired by those charged with the duty of considering estimates and approving, or disapproving, same. In the highly segregated budget it is desirable to condense the data for the appropriation ordinance. Generally, however, budget estimates are not sufficiently detailed to permit proper judgment being exercised in regard thereto, and the appropriation ordinance, in such case, is frequently not detailed enough to insure proper control over expenditures.

BUDGET AS FINANCIAL PROGRAM.—The budget, therefore, is, or should be, the proposed financial program of the city for a future fiscal period. As such it is the most important financial report of the city. To make it most serviceable as an instrument by which the legislative body may determine financial needs and policies for the future period, it should present the following:

1. Statements and schedules containing full and complete information as to present condition of all funds and appropriations.
2. Schedules of estimated revenues for each fund, and in comparison with actual revenues of preceding fiscal period.
3. Schedules of estimated expenditures of the future period for each fund, classified by organization units, and in comparison with actual expenditures of the preceding period.
4. It should also present contemplated borrowings for each fund, in comparison with actual borrowing of preceding period.

Standard form of **budget estimate sheet** and summary form are shown in Forms 1, 2.

APPROPRIATION ORDINANCE.—After consideration of statements presented in budget, the legislative body (city council) authorizes the expenditure of amounts determined upon, by passing an appropriation ordinance which fixes the amounts which may be expended by each organization unit for the objects specified.

TAX RATE.—In passing the appropriation ordinance, amount of tax rate applicable to general fund is also determined (assessed valuation having been determined), since revenue to be raised by taxation is amount by which appropriated amount exceeds estimated revenues. Consideration of this fact makes apparent the need of care in estimating the amount of revenues that will be collected, since if the estimate is too high, there will be a deficit if total of appropriations authorized is expended. On the other hand, if revenues are underestimated, funds collected will be in excess of amount needed, and an unnecessary and tempting surplus will be created.

In some states it is legally required that the miscellaneous revenue item of the budget estimates of receipts shall be the amount of average receipts for preceding 5 years. This requirement checks manipulation.

STANDARD APPROPRIATION AND ACCOUNTING CLASSIFICATION.— Budget estimates should be prepared, and appropriations to the various organization units of the city should be in conformity with a **standard classification of accounts** uniform for all departments, subdivisions, and bureaus, but sufficiently comprehensive in terminology to embrace every requirement of all subdivisions of city organization. Such classification is

CITY OF	SALARY AND WAGE SUMMARY	INC. 21	AMOUNT 22	COMPARISON OF ANNUAL RATE OF EXPENDITURE WITH REQUEST AND RECOMMENDED 1916		
	Expended 1914				REQUESTED 23	RECOMMENDED 24
Departmental Estimate Sheet	Appropriation [Original Budget] 1915			TOTAL AMOUNT		
	Transfers to			Net Increase Due to Change of Force		
	Transfers from			Net Decrease Due to Change of Force		
	Net Amount Available 1915			Net Increase Due to Change of Rate		
	Expended 1915			Net Decrease Due to Change of Rate		
	Unexpended Balance 1915			Net Total Increase		
Personal Service	Annual Rate of Expenditure as of November 30, 1915			Net Total Decrease		
				Net Reduction of Request		

	Line Number	CODE	TITLE OF POSITION	ANNUAL RATE OF EXPENDITURE AS OF NOVEMBER 30, 1915			APPROPRIATED (Original Budget) 1915			AMOUNT EXPENDED 1915	REQU 19	
				In-cum-bents	Rate	Amount Annual Expenditure	In-cum-bents	Rate	Amount		In-cum-bents	Rate
		1	2	3	4	5	6	7	8	9	10	11
This Line only for Totals and Forwards												
	1											
	2											

FORM 1a. Budget Estimate Sheet (left half)

Department ______________________________ Sheet No. ______

Division or Bureau ______________________________

Activity or Function ______________________________

Sheets No. ______ to ______ inclusive Respectfully Submitted by ______________________________

______________ Signature ______________ Title ______________ Date

This sheet to be used for following schedules only { Salaries of Permanent Employees / Wages of Permanent Employees / Salaries and Wages of Temporary Employees / Fees, Commission, Special Services } To be listed in separate groups

STED 6	Comparison Between Requested and Annual Rate of Expenditure as of November 30, 1915				Mayor's Recommendation for Appropriation 1916			REMARKS	Line Number
Amount Annual Expenditures 12	Due to Change of Force		Due to Change of Rate		In-cum-bents 17	Rate 18	Amount 19	See Instruction for Use of this Column 20	
	Increase Amount 13	Decrease Amount 14	Increase Amount 15	Decrease Amount 16					
									1
									2

Form 1b. Budget Estimate Sheet (right half)

CITY OF ____________

Summary of Departmental Budget Estimates

DEPARTMENT Fire SHEET NO. 2

DATE December 15, 1915

(This is an illustrative sample sheet only, Figures are taken arbitratively Spaces with italic figures are not filled out by Departments)

DIRECTIONS The department should fill out this sheet completely as far as possible and forward it to the Mayor's office with the Estimate Sheets

LINE NO.	ITEM	TOTAL	PERSONAL SERVICE	10 OTHER THAN PERSONAL	FIXED CHARGES	SUPPLIES	MATERIAL	EQUIPMENT	LANDS and STRUCTURES	DEBT	UNCLASSIFIED
1	Appropriated 1914 (Original Budget)	287 484	235 000	10 500	3 000	12 700	300	20 984	5 000		
2	Expended 1914	284 868 37	233 568 77	10 482 83	2 848 50	12 342 18	285 42	20 584 84	4 759 83		
3	Appropriated 1915 (Original Budget)	285 325	238 375	10 400	2 656	12 625		17 769	3 500		
4	Transfers to	4 675					444	4 231			
5	Transfers from										
6	Total Available 1915	290 000	238 375	10 400	2 656	12 625	444	22 000	3 500		
7	Expended 1915	288 587 63	237 968 75	10 362 18	2 518 50	12 486 42	399 56	22 000	2 862 22		
8	Unexpended Balance	1 412 37	406 25	37 82	137 50	138 58	44 44		637 78		
9	Requested for 1916	322 840 00	240 000	8 000	3 500	15 000	1 500	38 000	6 840		
10	Recommended for 1916	*295 000*	*239 000*	*10 500*	3 000	*14 000*	*1 000*	*25 000*	*2 500*		
11	Appropriated for 1916	*290 000*	*239 000*	*10 500*	3 000	*14 000*	*1 000*	*20 000*	*2 500*		
12	Increase of Request over Expended 1914	37 971 63	6 431 23		651 50	2 657 82	1 214 58	17 416 16	2 080 17		
13	Decrease of Request under Expended 1914			2 482 83							
14	Increase of Request over Expended 1915	34 253 27	2 031 25		981 50	2 513 58	1 100 44	16 000	3 977 78		
15	Decrease of Request under Expended 1915			2 362 18							
16	Increase of Recommendation over Expended 1915	*6 412 27*	*1 031 25*	*137 82*	*481 50*	*1 513 58*	*600 44*	*3 000*			
17	Decrease of Recommendation under Expended 1915								*362 22*		
18	Recommended Cut in Request	*27 840*	*1 000*	**2 500*	*500*	*1 000*	*500*	*13 000*	*4 340*		
19	Increase — Appropriated over Expended 1915	*1 412 27*	*1 031 25*	*137 82*	*481 50*	*1 513 58*	*600 44*				
20	Decrease — Appropriated under Expended 1915							*2 000*	*362 22*		
21	Per Cent of Increase — Request over Expended 1915	11.8	8.5		38.9	20.1	275.8	72.7	138.9		
22	Per Cent of Decrease — Request under Expended 1915			22.7							
23	Per Cent of Increase — Recommended over Expended 1915	2.2	.4	*1.3*	*19.1*	*12.1*	*150.5*	*13.7*			
24	Per Cent of Decrease—Recommended under Expended 1915								*12.6*		
25	Per Cent of Recommended Cut in Request	8.6	.4	**31.2*	*14.3*	6.6	33.3	34.2	63.8		
26	Per Cent Increase — Appropriated over Expended 1915	.5	.4	*1.3*	*19.1*	*12.1*	*150.5*				
27	Per Cent Decrease — Appropriated under Expended 1915							*9.1*	*12.6*		

*Increase

FORM 2. Summary Budget Estimate Sheet

presented below, so designed that it may be used in conjunction with tabulating machine records. It permits of decimal subdivision of classification in as much detail as desired. Only primary classification is indicated here.

Standard Codified Classification of Objects of Expenditure

00 – PERSONAL SERVICES
- 1. Salaries of permanent employees
- 2. Wages of permanent employees
- 3. Salaries and wages of temporary help
- 4.
- 5.
- 6.
- 7.
- 8.
- 9. Fees and compensation for personal services not elsewhere provided for.

10 – SERVICES OTHER THAN PERSONAL
- 11. Transportation of persons
- 12. Transportation of things
- 13. Subsistence and support of persons
- 14. Subsistence and care of animals and storage and care of vehicles
- 15. Communication service
- 16. Printing, engraving, lithographing, and binding
- 17. Advertising and publications
- 18. Furnishing of light, heat, power, and electricity
- 19. Special and miscellaneous services other than personal not elsewhere provided for

20 – FIXED CHARGES AND CONTRIBUTIONS
- 21. Rents
- 22. Insurance
- 23. Taxes and fees paid by city
- 24. Pensions and retirement salaries
- 25. Contributions to persons and institutions
- 26. Damages to persons and property
- 27. Interest
- 28.
- 29. Special and miscellaneous fixed charges and contributions not elsewhere provided for

30 – SUPPLIES
- 31. Office, drafting, scientific and educational supplies
- 32. Fuel (including burning and illuminating gases, oils, and liquids)
- 33. Mechanics', engineers', and electricians' supplies; furnace and foundry supplies (excepting fuels)
- 34. Cleaning and toilet supplies
- 35. Wearing apparel, linen and sewing supplies
- 36. Forage and other supplies for animals
- 37. Provisions for persons
- 38. Medical, surgical, and laboratory supplies
- 39. Special and miscellaneous supplies not elsewhere provided for

40 – MATERIALS
- 41. Raw materials
- 42. Metals, and metal products
- 43. Non-metallic mineral products
- 44. Lumber, and wood products
- 45. Fiber products
- 46. Paints, and painters' materials
- 47.
- 48.
- 49. Miscellaneous materials not elsewhere provided for

50 – EQUIPMENT AND PARTS
- 51. Heat, light, power, ventilation, refrigerators, and electrical equipment
- 52. Production, construction, and conveying equipment
- 53. Livestock
- 54. Furniture and furnishings
- 55. Property and life preserving and caretaking
- 56. Educational, scientific, and recreational equipment
- 57. Medical, surgical, and laboratory equipment
- 58.
- 59. Miscellaneous equipment not elsewhere provided for

60 – LANDS AND STRUCTURES
- 61. Lands
- 62. Buildings and structures
- 63. Bridges and viaducts
- 64. Excavations and quarries
- 65. Reservoirs and quarries
- 66. Retaining and restraining walls, dams, jetties, etc.
- 67. Damages and property charges
- 68.
- 69. Other capital outlays

70 – DEBT
(Subdivided as requirements of city dictate)

80 –

90 – MISCELLANEOUS ITEMS NOT OTHERWISE CLASSIFIED

Every need of any division of a city organization may be expressed in such a classification. Apart from convenience of a standardized classification of appropriations to be used by all departments, a greater advantage is permanent uniformity insured in accounts, however simple or elaborate the analysis of a department's requirements may be. Every kind of service or class of thing which may be purchased or acquired, or every object for which an expenditure can be made, falls naturally and rationally under some one or other of the primary classifications, and the secondary classifications where needed follow with same facility.

Department heads, in preparing budget estimates in accordance with a standard classification of this kind, must plan and think systematically along similar lines, which greatly facilitates the task of the budget-passing body. Appropriation accounts, following the use of such a standard classification, also become capable of comparison as between city divisions and as between periods, and are therefore of great value in preparation of budget estimates.

General Ledger Accounts

GENERAL.—As previously explained, municipal accounts consist of two completed circles of accounts, viz., **fund circle** and **proprietary circle**, both groups being maintained for each class of funds previously described, except that ordinarily the proprietary circle of accounts is sufficient to the needs of sinking funds.

The general ledger is, therefore, in practice divided as between the four classes of accounts; or there may be four general ledgers, viz., one for each class of funds. Each of said primary classes, or ledgers, is further divided into two subdivisions, viz., one for fund circle of accounts, the other for proprietary. Under each of such subdivisions required accounts should be arranged in balance sheet order, viz., in order of assets, expenses, liabilities, and revenues. Most accounts appearing in the general ledger will, if the municipality is of any size, necessarily be **controlling accounts.**

BALANCE SHEET.—The representative balance sheet accounts or classes of accounts for each fund group are indicated below. For purposes of reference to matter following, these accounts are coded. This is a practical working code, possessing ample capacity for expansion.

PROPRIETARY ACCOUNTS

		Code
GENERAL FUND	1000	
Assets	100	
Cash		1101
Taxes Receivable		1102
Revenues Receivable—Miscellaneous		1103
Accounts Receivable		1104
Materials and Supplies		1105
Property—Non-permanent		1106
Advances to Other Funds		1107
Expense	200	
By Departments		1200
By Functional Classifications.		
Liabilities	400	
Vouchers Payable		1401
Warrants Payable		1402
Due to Other Funds		1403
Loans—Short-Term		1404
Reserves		1405
Surplus (or Deficit)		1409
Revenues	500	
Revenue Accrued—Taxes		1501
Revenue Accrued—Miscellaneous		1502
Recovered Expenditures		1503
CAPITAL FUND	2000	
Assets	100	
Cash		2101
Revenues Receivable		2102
Accounts Receivable		2104
Materials and Supplies		2105
Property—Permanent		2106
Advances to Other Funds		2107
Expenses	200	
Miscellaneous		2200

		Code
Liabilities	400	
Vouchers Payable		2401
Warrants Payable		2402
Due to Other Funds		2403
Funded Debt		2404
Reserves		2405
Surplus (or Deficit)		2409
Revenues	500	
Proceeds of Bond Sales		2501
Revenues Accrued—Miscellaneous		2502
Recovered Expenditures		2503
SINKING FUNDS	**3000**	
Assets	100	
Cash		3101
Revenues Receivable		3102
Accounts Receivable		3104
Investments		3106
Expenses	200	
Miscellaneous		3200
Liabilities	400	
Vouchers Payable		3401
Warrants Payable		3402
Due to Other Funds		3403
Reserves		3405
Surplus (or Deficit)		3409
Revenues	500	
Contributions		3501
Miscellaneous Accruals		3502
SPECIAL AND TRUST FUNDS	**4000**	
Assets	100	
Cash		4101
Revenues Receivable		4102
Accounts Receivable		4103
Investments		4105
Advances to Other Funds		4107
Expenses	200	
Miscellaneous		4200
Liabilities	400	
Vouchers Payable		4401
Warrants Payable		4402
Due to Other Funds		4403
Reserves		4405
Surplus (or Deficit)		4409
Revenues	500	
Miscellaneous Accruals		4502

FUND ACCOUNTS

		Code
GENERAL FUND	**5000**	
Resources	100	
Estimated Revenues		5101
Available Resources		5102
Unapplied Cash		5103
Appropriations and Reserves	400	
Unappropriated Estimated Revenue		5401
Appropriations		5402
Reserves		5403
Surplus (or Deficit)		5409
CAPITAL FUND	**6000**	
Resources	100	
Authorized Bond Issues		6101
Available Bond Proceeds		6102
Unapplied Cash		6103
Appropriations and Reserves	400	
Unissued Authorized Bonds		6401
Bond Appropriation Ledger		6402
Reserves		6403
Surplus (or Deficit)		6409
SPECIAL AND TRUST FUNDS	**8000**	
Resources	100	
Estimated Revenues		8101
Available Resources		8102
Unapplied Cash		8103
Appropriations and Reserves	400	
Unappropriated Estimated Revenue		8401
Special and Trust Fund Appropriation Ledger		8402
Reserves		8403
Surplus (or Deficit)		8409

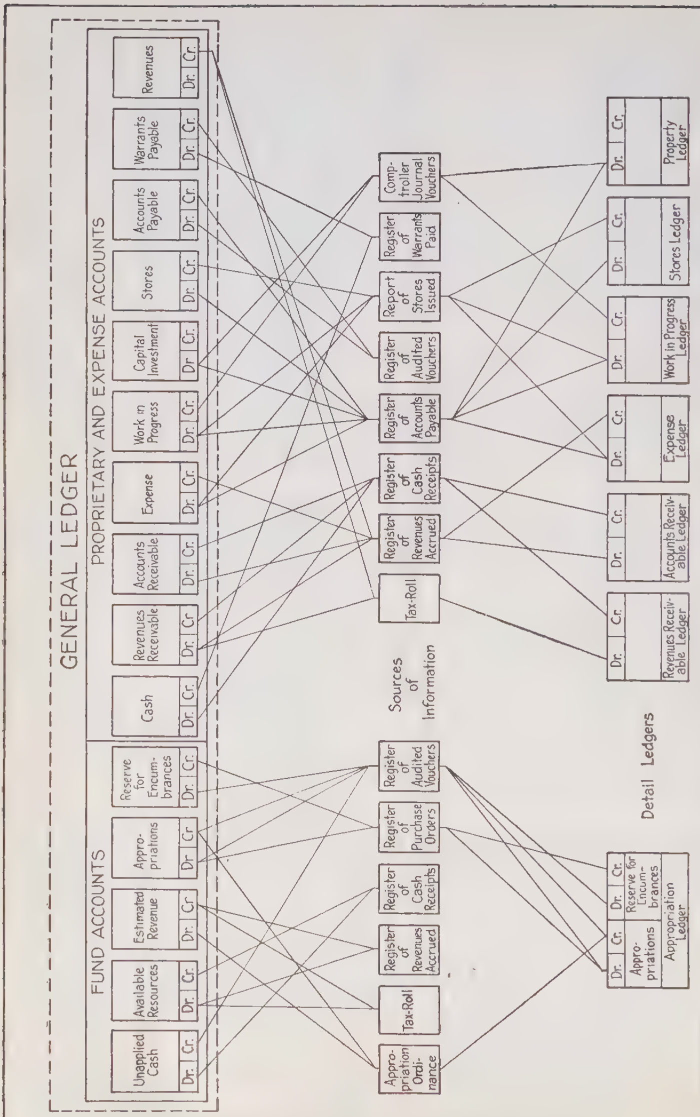
INFORMATION TO BE PRESENTED IN ACCOUNTS.—In following list is noted, as briefly and comprehensively as possible, main classes of facts and transactions to be recorded in municipal accounts to make possible the presentation of statements of revenues, expenditures, obligations, and resources.

Such information is of **three classes,** as follows:

1. Official actions from day to day of governing bodies and officials whereby condition of funds is modified or determined.
2. Daily business transactions of officials in carrying on city activities.
3. Net resources of city.

These essential facts are usually, though not always, to be recorded in both fund and proprietary circles of accounts.

To illustrate intent and purpose of balance sheet accounts designated above, and nature of charges and credits made to them, a list of the principal items



FORM 3. Plan of Municipal Accounting

of information to be recorded is presented below, followed by journal entries necessary to record such information in both fund and proprietary accounts with such references to information to be recorded, journal entries, and accounts, as will assist in conveying the idea it is desired to present

Principal Acts and Conditions to be Stated (Premises)

Symbol		Entry No.
A	Official estimate of the amount of the estimated revenue which will accrue to city within a period	1
B	Official estimate of amount of expenditure that will be necessary to maintain or perform functions of city government during same period	1
C	Amount of tax it will be necessary to raise to meet estimated obligations of city (difference between estimated revenue and estimated expenditure—A and B above)	1
D	Act of council in passing budget ordinances authorizing appropriations	2
E	Amount of annual tax as authorized by council when assessed and confirmed (Tax-rolls)	3
F	Charges made by city for permits, licenses, privileges, etc	4
G	Charges made by city for services rendered—cost of which is recoverable	5
H	Collection of tax assessments	6
J	Receipts from miscellaneous sources of revenue	7
K	Receipts of amounts due city on accounts receivable	8
L	Encumbrances (incurred liabilities) of appropriation through issue of purchase (open-market) orders, or other authorization of services to be rendered by outside parties	9
M	Encumbrances of appropriations, or other funds through execution of contracts	10
N	Registration by city departments, divisions, or offices of invoices payable which they approve for payment and their distribution to appropriation, asset, and expense account	11
P	Audit of invoices and issue of warrants payable	12
Q	Liquidation of encumbrances (through issue of vouchers payable or cancellation of orders and contracts)	13
S	Payment of warrants by treasurer	15
T	Loans in anticipation of collection of taxes	16
V	Provision for uncollectible taxes	17
W	Shortage in collection of estimated revenues	18
X	Excess of amount received over estimated revenue	19

ENTRIES NECESSARY TO RECORD SUCH INFORMATION.—The entries necessary, in event of each of above premises, to reflect conditions resulting therefrom, are stated below. These entries and accounts affected are also represented graphically in the chart presented herewith (Form 3). In the following the alphabetical symbol refers to preceding list of premises; the four-place number, to ledger account affected.

Entries in Proprietary Accounts

Premise		General Ledger Account No.
	Entry No. 1	
A, B, C	No entry in proprietary accounts	
	Entry No. 2	
D	No entry in proprietary accounts	
	Entry No. 3	
E	Taxes Receivable	1102
	Sundry Accounts	Subledger
	To Revenue Accrued—Taxes	1501
	Entry No. 4	
F	Revenue Receivable—Miscellaneous	1103
	Sundry Accounts	Subledger
	To Revenue Accrued—Miscl.	1502
	Entry No 5	
G	Revenue Receivable—Miscellaneous	1103
	Sundry Accounts	Subledger
	To Recovered Expenditures	1503

Premise		General Ledger Account No.
	Entry No. 6	
H	Cash	1101
	To Taxes Receivable	1102
	To Sundry Accounts	Subledger
	Entry No. 7	
J	Cash	1101
	To Revenues Receivable—Miscl.	1103
	To Sundry Accounts	Subledger
	Entry No. 8	
K	Cash	1101
	To Accounts Receivable	1104
	To Sundry Accounts	Subledger
	Entry No. 9	
L	No entry in proprietary accounts	
	Entry No. 10	
M	No entry in proprietary accounts	
	Entry No. 11	
N	Expense	1200
	Sundry Accounts	Subledger
N	Materials and Supplies	1105
	Sundry Accounts	Subledger
N	Property	1106
	Sundry Accounts	Subledger
N	Advances to Other Funds	1107
	Sundry Accounts	Subledger
	To Vouchers Payable	1401
	Entry No. 12	
P	Vouchers Payable	1401
	To Warrants Payable	1402
	Entry No. 13	
Q	No entry in proprietary accounts	
	Entry No. 14	
S	Warrants Payable	1402
	To Cash	1101
	Entry No. 15	
T	Cash	1101
	To Loans—Short Term	1404
	To Sundry Accounts	Subledger
	Entry No. 16	
V	Surplus	1409
	To Reserve for Uncollectible Taxes	1405
	Entry No. 17	
W	No entry in proprietary accounts.	
	Entry No. 18	
X	No entry in proprietary accounts.	

Entries in Fund Accounts

Premise		General Ledger Account No.
	Entry No. 1	
	Estimated Revenue	5101
A	Sundry Accounts — Miscl. Sources (Estimated Sundry Accounts)	Subledger
B	Sundry Accounts—Taxes Sundry Accounts	Subledger
	To Unappropriated Estimated Revenue	5401
	Entry No. 2	
D	Unappropriated Estimated Revenue	5401
	To Appropriations	5402
	To Sundry Accounts	Subledger
	Entry No. 3	
E	Available Resources	5102
	To Estimated Revenue	5101
	To Sundry Accounts	Subledger
	Entry No. 4	
F	Same as entry No. 3.	
	Entry No. 5	
G	Same as entry No. 3.	
	Entry No. 6	
H	Unapplied Cash	5103
	To Available Resources	5102
	Entry No. 7	
J	Same as entry No. 6.	
	Entry No. 8	
K	Same as entry No. 6.	
	Entry No. 9	
L	Appropriations	5402
	Sundry Accounts	Subledger
	To Reserve for Encumbrances	5403
	Entry No. 10	
M	Same as entry No. 9.	
	Entry No. 11	
N	Appropriations	540[illegible]
	Sundry Accounts	Subledger
	To Unapplied Cash	5103
Q	Reserve for Encumbrances	5403
	To Appropriation Ledger	5402
	To Sundry Accounts	Subledger
	(Reversing entry No. 9 for the amount of the original encumbrance, the place of which the invoice amount has taken.)	
	Entry No. 12	
P	No entry in fund accounts.	
	Entry No. 13	
Q	See under entry No. 11.	

Premise		General Ledger Account No.
	Entry No. 14	
S	No entry in fund accounts.	
	Entry No. 15	
T	No entry in fund accounts.	
	Entry No. 16	
V	Surplus......................	5409
	To Available Resources......	5102

Premise		General Ledger Account No.
	Entry No. 17	
W	Surplus......................	5409
	To Estimated Revenues......	5401
	To Sundry Accounts......	Subledger
	Entry No. 18	
X	Estimated Revenue............	5101
	Sundry Accounts...........	Subledger
	To Unappropriated Estimated Revenue................	5401

General Plan of Municipal Accounting

RECORDS REQUIRED.—The first essential to presenting accurate records and statements relative to current transactions, resources, and liabilities, is an efficient plan of reporting transactions, assembling figures, and verifying their accuracy. To accomplish this there has developed in municipal accounting offices a general tendency to build up accounting systems along lines based, however varied in individual cases, on the following **essential classes of records:**

1. Files of documents containing the original entry, describing the transaction.
2. Registers for each class of documents.
3. Subsidiary ledgers, containing only detailed accounts.
4. General ledgers, containing only control or summary accounts.

The **general method of operating** these classes of records is same for all of a city's departments, divisions, and offices, whether applied to revenues or expenditures, and, in brief, is as follows:

1. Preparation of an individual documental record for each transaction, duly authorized, verified, and certified.
2. Registration of individual documents, each class in a register of suitable design, according to class of document and according to fund affected.
3. Posting of amounts involved direct from documents to detail accounts in subsidiary ledgers.
4. Posting of periodical totals from registers to control accounts in general ledgers.
5. Proof of accuracy of work through a comparison of schedules of balances of accounts of subsidiary ledgers with balance of controlling account in general ledger.

Such a method is the logical and natural outcome of conditions existing in all cities if central control over accounts is attempted.

Revenues that accrue from many sources in various city departments and expenditures that originate in all divisions of the city organization, must ultimately be accounted for and controlled through one central accounting office, and cleared through one department, viz., the treasury.

A **system of individually numbered documents**—originating in departmental offices, in as many copies as necessary, with control of such documents (as filed locally or transmitted to central office or to other offices) through registers and schedules, of which also as many copies as are required may be produced without extra labor—is the only system flexible enough to obtain

control and also meet the exacting demands of legal requirements. Also, since for convenience and expediency the detailed records and accounts are usually maintained in departmental offices, while for purposes of control, general ledger accounts must be maintained in the central accounting office, such methods lend themselves to quick and easy proof or detection of errors. Methods suggested here and the form submitted in illustration, are developments of the general plan outlined. A **chart** which attempts to express graphically the principles involved, is shown in Form 3 (p. 1220).

Balance Sheet Accounts of Funds

FUND ACCOUNTS.—Typical general ledger accounts stated in the preceding are those of the balance sheets for each **fund group.**

Accounts of the **proprietary circles** are those of private corporation accounting (excepting as regards profits) as adapted to the municipal corporation, and need no further explanation here.

The accounts of the **fund circles** are easily interpreted when it is considered that, in a municipality, financial operations begin with a budget consisting of two estimates, viz.: (1) Estimated Revenues, (a) Taxes, (b) Miscellaneous; and (2) Estimated Expenditures, and that such budget estimates, as fiscal year advances, are converted into realities in shape of actual cash receipts and expenditures, until finally, at end of year, there exists the record of total actual receipts and expenditures, which differs more or less from the original estimates.

The problem of fund accounting, therefore, is to state in the accounts as regards any fund, the following:

1. Original estimates, or amount of possible bond issues.
2. Official actions taken to materialize estimates.
3. Accomplished realities.
4. Net amount by which final results differ from estimates.

JOURNAL ENTRIES.—Journal entries (without subsidiary ledger entries) necessary to accomplish these steps in the general fund circle are given below. The entry reference numbers are those cited previously (pp. 1221–1223).

1. *When the estimate of revenue is officially adopted by the city council:*
   Estimated Revenues—Year.........
   To Unappropriated Estimated Revenues—Year..........
2. *When the appropriation act is passed by the city council:*
   Unappropriated Estimated Revenues—Year......................
   To Appropriations—Year ....
3. *When revenues are accrued, viz., when the tax-rolls are set up in the accounts as revenue receivable:*
   Available Resources
   To Estimated Revenues—Year....
6. *When taxes are collected:*
   Unapplied Cash..................
   To Available Resources—Year....
7. *When miscellaneous revenues are collected:* (Accruals and Collections of Miscellaneous Revenues are usually simultaneous.)
   Unapplied Cash
   To Estimated Revenues—Year....
9. *When requisitions on stores are made, or when purchase orders are issued:*
   Appropriations
   To Reserves for Encumbrances....
11. *When voucher warrants payable are approved for payment:*
   Appropriations
   To Unapplied Cash.............
   and, simultaneously, an entry reversing No. 9 just preceding, viz.,
   Reserve for Encumbrances
   To Appropriations
   (for the reason that the voucher is for an expenditure already reserved, and replaces that reserve as a charge against the appropriation, which necessitates the cancellation of the amount reserved.)

OPERATIONS IN GENERAL FUND

OPERATIONS	ASSETS			LIABILITIES				
	Estimated Revenues	Available Resources	Unapplied Cash	Unappropriated Est'd Revenue	Appropriation (Ledger)	Reserve for Uncoll. Revenue	Res. for Encumb. of Approp'ns	Surplus (Deficit)
Balance forward, Beginning of Year		$ 10,000	$ 50,000		$ 30,000	$10,000	$ 2,000	$18,000
Budget Estimate of Revenues for Ensuing Year	$ 200,000			$1,980,000		20,000		
Appropriations of Year				2,000,000	2,000,000			
Taxes Levied	1,475,000	1,475,000						
Miscellaneous Revenues Accrued during Year	620,000	620,000						
Taxes Collected during Year		1,460,000	1,460,000					
Miscl. Revenues Collected during Year		615,000	615,000					
Purchase Orders and Contracts of Year					1,990,000		1,990,000	
Voucher Warrants Payable Issued			2,000,000		2,000,000			
Cancellation of Corresponding Encumbrances					1,985,000		1,985,000	
Excess End of Year:								
Accrued Revenue, over Estimated Revenues	95,000			95,000				
Unappropriated Est. Revenue				75,000				75,000
Balance forward End of Year		$ 30,000	$ 125,000		$ 25,000	$30,000	$ 7,000	$93,000

FORM 4. Operations in General Fund

At end of fiscal year, Estimated Revenues closes to Unappropriated Estimated Revenue, and latter account to Surplus, which operation shows either a surplus or a deficit for year according as appropriations have or have not exceeded revenues accrued.

A **chart** presenting **in total** the principal operations of the general fund accounts during a year is presented in Form 4, with a view to making clear relationship of the fund balance sheet accounts.

Accounting for Capital Resources and Liabilities

THE FUND STATEMENT.—A fund statement in connection with the **capital fund** should be prepared, but is frequently disregarded. Such a fund statement should show resources which the municipality has at its command to finance public works which involve too large an expenditure to be paid out of general revenue. The principal capital fund resource which a municipality has is its ability to borrow. This is usually controlled by a state law which fixes **maximum borrowing capacity** at anywhere from 5% to 12% of **assessed valuation** of property in the municipality. This resource may be set up in the accounts as "Possible Bond Issues," with corresponding credit account called "Balance Available for Public Improvements."

WHEN BONDS ARE ISSUED.—

In the proprietary accounts:

Cash
 To Bonds Outstanding

In the fund accounts:

Balance Available for Public Improvements
 To Possible Bond Issues

If an appropriation is made of any amount of the sum obtained through a bond issue, entry is similar to that given under "General Fund," viz.:

Unapplied Cash
 To Appropriations

Frequently a municipality receives a **premium** on sale of bonds. In such case officials usually insist that this amount be used for "Capital Outlay" in same way as the principal. However, since premiums are adjustments of interest rate, they should be taken into the general fund and be written off over life of the bond.

Discount on bonds, on the other hand, is frequently made good out of the general fund through appropriation. While to handle this correctly is easier than in case of the preceding example, it still is difficult in view of the general level of accounting knowledge in municipal administration.

All **construction work performed** should be charged to Work in Progress. When work is completed, this account should be cleared and the expenditure charged to the appropriate asset account.

At end of month closing entries are:

In the proprietary accounts:

(a) Work in Progress
 To Accounts Payable

(b) Accounts Payable
 To Cash

(c) Lands
 Structures
 Improvements
 Equipments
 To Work in Progress

In the fund accounts:

Appropriations
 To Unapplied Cash
 To Reserve for Encumbrances

LOCAL IMPROVEMENT FUNDS.—Local improvements are properly classified under the capital account. The procedure differs among municipalities regarding manner in which improvements are authorized, as well as in connection with financing. Local improvements are usually made by the municipality and disbursements by city officials. Entire cost of an improvement may be assessed against property owners; but where a portion only of cost is assessed, balance is paid out of general city funds or from proceeds of general bond issues. No difficulty is found in accounting where the municipality assumes the entire cost and sells bonds before work is started. Journal entries in this case are:

Cash
  To Bonds Outstanding
	Work in Progress
	  To Accounts payable

Where a municipality pays part of cost of an improvement and balance is assessed against property owners, it is necessary to keep an accurate record of total cost until project is completed and assessments can be made. This is done through a Work in Progress account, with a subsidiary record for each improvement.

If cash is disbursed out of general fund cash, it is necessary to treat the matter as though two companies were involved. In general fund accounts, credit Cash and charge Advances to Other Funds, and in the capital fund, pick this item up by charging Work in Progress and crediting "Due to Other Funds." It may be that part of cash so paid out of the general account represents the city's share, in which case amount paid should be charged to "Advances to Other Funds" and picked up in capital account as before.

When correct amount of city's share of cost of work is determined, such amount is to be treated as a donation to capital fund and charged against General Fund Surplus. Likewise, in capital fund, an equal amount of the liability to the general fund should be canceled and credited to Capital Fund Surplus.

Accounting for Sinking Fund

INFORMATION REQUIRED.—Sinking funds are created through receipts from the general tax levy, from interest on deposits, securities, and frequently from special sources. Facts required to be known about the status and administration of the sinking fund are:

Cash on hand	Reserves
Securities on hand (at cost and market)	Surplus
Accounts receivable	Disbursements of sinking funds
Accounts payable	Per cent of yield on investments

Information should also be presented as to present status of the sinking fund in relation to bonds outstanding and conditions of their issue.

A set of fund accounts will concisely state these facts and would be developed by journal entry as follows:

Unapplied Cash
Investments
Accounts Receivable
  To Sinking Fund Reserves (For each bond issue.)
  To Surplus

Balance Sheet and Statement Forms

To illustrate, working examples of municipal balance sheets, together with statements of operating revenues and expense, are shown in Forms 5–12.

The City of —————————— EXHIBIT A
Consolidated General Balance Sheet Date 19—

ASSETS	Totals	General Fund	Water Dept.	Capital Fund	Sinking Fund	Sp'l and Tr. Funds
CASH:						
In Bank						
In Hand						
AMOUNTS DUE THE CITY:						
Revenues Receivable						
Accounts Receivable						
STORES						
WORK IN PROGRESS						
ADVANCES:						
To Other Accounts						
Miscellaneous						
PROPERTY						
INVESTMENTS						
TOTAL ASSETS						
LIABILITIES						
IMMEDIATE DEMANDS FOR CASH:						
Accounts Payable						
Interest Due and Payable						
LOANS:						
To be Repaid from Current Revenue						
To be Repaid from Sale of Bonds						
FUNDED DEBT:						
Bonds Outstanding						
Less—Sinking Fund Reserve						
Net Bonded Indebtedness						
DUE TO OTHER ACCOUNTS						
ACCRUALS						
RESERVES						
SURPLUS						
TOTAL LIABILITIES						

FORM 5. Consolidated General Balance Sheet

The City of ——————————

Consolidated Fund Balance Sheet Date 19—

EXHIBIT B

RESOURCES	Total	General Fund	Water Dept.	Capital Fund	Sinking Fund	Sp'l and Tr. Funds
CASH AVAILABLE						
AMOUNTS DUE THE CITY:						
Available Resources						
Bonds Issued—Not Sold						
ESTIMATED REVENUE:						
Balance to be Accrued						
Bonds Authorized—Not Issued						
INVESTMENTS						
TOTAL RESOURCES						
EXCESS OF APPROPRIATIONS AND RESERVES						
Total						
LIABILITIES						
APPROPRIATIONS AND AUTHORIZATIONS:						
Unexpended Balance						
Less—Reserve for Encumbrances						
Net Unencumbered Balance						
RESERVES:						
Prior Year Appropriations						
Retirement of Temporary Loans						
Re-Appropriations						
Loans—Bonds Issued—Not Sold						
Loans—Bonds Authorized—Not Issued						
TOTAL LIABILITIES						
EXCESS OF RESOURCES						
Total						

FORM 6. Consolidated Fund Balance Sheet

The City of ——————————— EXHIBIT J

Cash Statement Date ——————— 19—

Descriptive	Sch. No.	This Month	Last Month	Comparison Black: Decrease Red: Increase	To Date		Comparison Black: Decrease Red: Increase
					This Year	Last Year	
REVENUES ACCRUED—ORDINARY:							
Taxes—Real Estate							
Taxes—Personal							
Taxes—Poll							
Miscellaneous Sources							
Recovered Expenditures							
Total Revenues—Ordinary							
EXPENSE INCURRED:							
General Government	1						
Protection of Persons and Property	2						
Public Works	3						
Charities	4						
Soldiers' and Sailors' Benefit	5						
Education	6						
Recreation	7						
Unclassified	9						
Total Expense—Ordinary							
EXCESS:							
Ordinary Revenue over Expense							
Ordinary Expense over Revenues							
OTHER REVENUE:							
Profit—Operation of Water Works	9–10						
Total—Other Revenue							
TOTAL							
DEDUCTIONS FROM REVENUE:							
Interest, Temporary Loans and Funded Debt							
Payments—To Sinking Funds							
Payments—Serial Bonds							
Loss—Operation of Water Works	9–10						
Total Deductions							
SURPLUS							
DEFICIT							

FORM 7. Statement of Operating Revenues and Expense

The City of ______________ EXHIBIT G

Cash Statement Date 19—

Descriptive	Total	General Fund	Water Dept.	Capital Fund	Sinking Fund	Sp'l and Tr. Fund
BALANCE ON HAND, ...19...						
Receipts..............................						
Total..........................						
Disbursements.......................						
BALANCE ON HAND,................19...						
DISTRIBUTION:						
Total..........................						
LOCATION OF BALANCE:						
In Bank:						
Total..........................						
In Office of Treasurer..................						
Imprest Funds:						
Total Imprest Funds..............						
Total..........................						

FORM 8. Cash Statement

The City of ——————————— Exhibit C

General Fund Balance Sheet Date 19—

ASSETS	Sch. No.	This Year		Last Year		Comparison—With Prior Period	
						Increase	Decrease
Cash:							
In Bank							
In Hand							
Imprest Funds:							
____________ Dept.							
____________ Dept.							
Total							
Amounts Due the City:							
Revenues Receivable:							
Real Estate Taxes							
Personal Taxes							
Poll Taxes							
Miscellaneous							
Accounts Receivable							
Total							
Stores:							
Work in Progress:							
Advances:							
To Other Accounts							
Miscellaneous							
Total Assets							
LIABILITIES							
Immediate Demands for Cash:							
Accounts Payable							
Interest Due and Payable							
Loans to be Repaid from General Revenue:							
Due to Other Accounts:							
Accruals:							
Interest on Funded Debt—Not Due							
Reserves:							
Uncollectible Taxes and Accounts							
Rebates on Taxes							
Surplus							
Total Liabilities							

Form 9. General Fund Balance Sheet

The City of —————— EXHIBIT E

Capital Fund Balance Sheet Date 19—

ASSETS	Sch. No.	This Year	Last Year	Comparison—With Prior Period: Increase	Comparison—With Prior Period: Decrease
CASH:					
In Bank					
On Hand					
AMOUNTS DUE THE CITY:					
WORK IN PROGRESS:					
PROPERTY:					
Land					
Building and Structures					
Non-Structural Improvements					
Equipment					
ADVANCES:					
TOTAL ASSETS					
LIABILITIES					
LOANS TO BE REPAID FROM SALE OF BONDS					
FUNDED DEBT:					
Bonds Issued					
Less—Bonds Not Sold					
Bonds Outstanding					
Less—Sinking Fund Reserve					
Net Bonded Indebtedness					
DUE TO OTHER ACCOUNTS:					
RESERVES:					
Depreciation of Property					
SURPLUS					
TOTAL LIABILITIES					

FORM 10. Capital Fund Balance Sheet

Subsidiary Ledgers

SUBSIDIARY LEDGERS REQUIRED.—It is customary to carry all accounts of such a group in a subsidiary ledger. With a municipality, the **principal subsidiary ledgers** are:

Property Ledger	Contract Ledger
Revenues Receivable Ledger	Stores Ledger
Accounts Receivable Ledger	Expense and Advance Ledger
Appropriation Ledger	Operating Ledger

In but one or two cases do these ledgers differ from ordinary subsidiary ledgers of private corporations. **Sample forms** for such ledgers, suitable to municipal accounting, are shown hereafter.

PROPERTY LEDGER.—Property, other than cash and investments, owned by a city, falls under one of the following classes:

1. Real Estate
2. Building and Structure
3. Non-structural Plant
4. Plant Equipment
5. Stores and Supplies

All of the above classes, except "Stores and Supplies," should be represented by detailed accounts brought together in the property ledger. **Ruling** of this ledger sheet should be special and so designed as to permit indicating graphically street location and dimensions of **realty.** It is also of advantage to provide on same sheet for carrying the depreciation reserve account for the particular piece of property the sheet represents in conjunction with the property account.

APPROPRIATION LEDGER.—In the appropriation ledger is maintained a separate account for each budget and special appropriation either from general, capital, or special funds and with contracts payable from appropriation or fund resources. For examples of ruling for this ledger, see Form 11.

Encumbrances (purchase orders or contracts) are charged in detail against appropriations supplying cash for expenditures and set up in total as a reserve for liabilities incurred through issue of the orders. Such reserves remain in force until invoices covering amount of original encumbrance are vouchered, when reserve is reversed in each case, and amount of invoice itself is charged against the appropriation in place of order amount. This procedure automatically adjusts all differences between estimated amount of expenditures, which is originally reserved, and actual expenditure covered by the voucher and warrant.

The **register of accounts payable form** is designed to gather such figures in total monthly for the control entries. (See Form 12.)

Entry made to set up appropriation ledger, when budget is passed by council, is:

In the fund accounts:

Charge: Unappropriated Estimated Revenue Credit: Appropriations	For amount of yearly budget in total (by funds) in the general ledger account – and in detail to each of the separate titles of the appropriation ordinance, in appropriation ledger.

DEPARTMENT	DIVISION	OFFICE OR FUNCTION

APPROPRIATION AND TRANSFERS				
DATE	REFERENCE	MEMO	AMOUNT	NET TOTAL

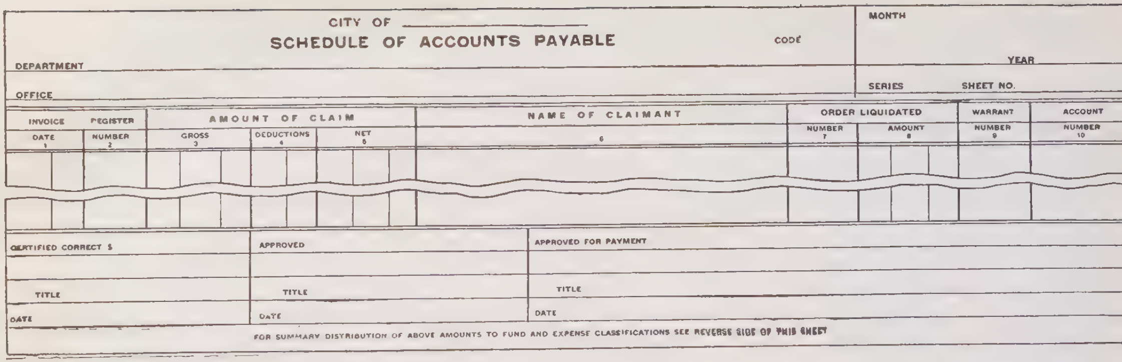
CITY OF ____

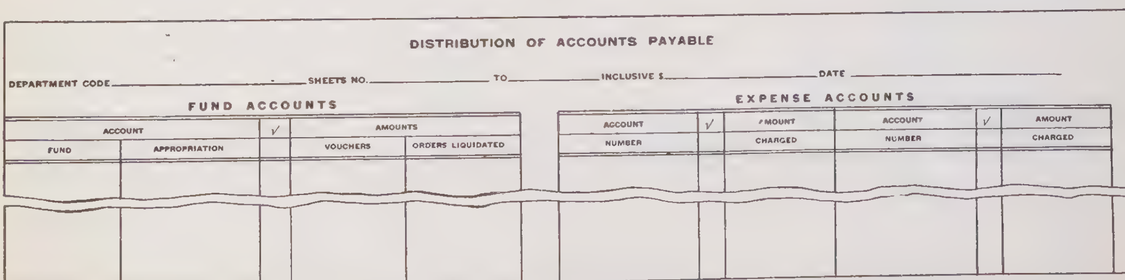
APPROPRIATION LEDGER

APPROPRIATION	CODE	REVENUE	NON-REV	FUND	SHEET NO

RESERVE FOR ENCUMBRANCES					EXPENDITURES						BALANCE	
DATE OF ENTRY	ORDER OR CONTRACT NO	AMOUNTS		BALANCE IN FORCE	DATE OF ENTRY	REFERENCE NUMBER		PARTICULARS		AMOUNT	UNEXPENDED	UNENCUMBERED
		RESERVED	LIQUIDATED			DEPARTMENTS	WARRANT	NAME	OBJECT OF EXPENDITURE		AMOUNT	AMOUNT
1	2	3	4	5	6	7	8	9	10 FORWARD	11	12	13

FORM 11. Appropriation Ledger





FORM 12. Register of Accounts Payable (face and reverse)

Entries made in connection with "encumbrances" of appropriations are as follows:

In the fund accounts:

Charge:
Appropriations
Credit:
Reserve for Encumbrances of Appropriations

In general ledger for monthly total of "orders" entered as per "register of orders" and in detail daily as registered, in detailed accounts of appropriation ledger.

In the proprietary accounts:

No entry.

When vouchers are passed covering orders, entries are:

In the fund accounts:

Charge:
Reserve for Encumbrances
Credit:
Appropriations
In general ledger monthly for total amount of canceled original encumbrances as per register of invoices payable and in detailed accounts of appropriation ledger daily as registered.

Charge:
Appropriations
Credit:
Unapplied Cash
As above, for amount of invoices registered.

EXPENSE LEDGER—CENTRAL OFFICE.—Total expenses incurred by city, whether expenditure has actually been made or not, are recorded in this ledger immediately the expense is incurred. **Mediums** through which such charges are made are the registers of accounts payable, and journal vouchers.

Such ledger contains **two distinct groups of accounts,** as follows:

1. Those accounts presenting a detailed classification of expenses of those city departments whose expense accounting is maintained in central accounting office of city.
2. Those "advance" accounts which control expense accounting of departments which, because of their larger activities and larger clerical capacity, maintain their own expense accounting.

Accounts of the second group are suspense accounts, to which are charged amounts of all value going into a department and to which are credited value of all completed construction work or periodical operating and maintenance costs of the department as reported by the department. Such accounts are controls of departmental expense accounting through which departments' accounts are connected with those of central office. Central accounting office of a city and that of the city department stand in same relationship, so far as accounts go, as does the central office of a corporation to the offices of its factories or branches.

With the city, pay-rolls are paid for departments, materials purchased for and delivered to them, expenses paid for them, that they may perform certain functions. They construct or repair streets, build sewers, maintain parks, police the city, clean the streets, furnish water, etc.—all which functions are measurable in some unit. Total costs of performing these various functions (to be obtained through suitable accounting), if divided by determined upon units of measure, give unit cost of construction or operation for each function, at which rates departments are to be credited according to number of units of completed work reported.

Amounts to be credited to departmental control accounts in expense and advance ledger are amounts to be finally recorded as costs of various constructive and operating functions performed by city.

Where **special construction work** is done, special cost accounting systems are maintained by departments performing the work which should be adequate to obtain true cost of the work. If cost of work is recoverable by assessments on abutting property, this is especially necessary, otherwise the city will lose money, as costs are generally above estimates. If work performed increases, value of city expense ledger accounts must be charged.

In general, entries in connection with expense ledger are as follows:

Central Office Books

In the expense accounts:

Charge:
  Expense and Advance Ledger
Credit:
  Vouchers Payable
  In total in general ledger controls
  In detail, by departments, or expense accounts, in expense ledger.

In the fund accounts:

Charge:
  Appropriation Ledger
Credit:
  Unapplied Net Cash
  In total to control accounts.
  In detail to accounts of appropriation ledger.

Department's Books

In the proprietary accounts:

Charge:
  Sundry Expense Accounts
Credit:
  Central Office
  In total to credit of central office.
  In detail to debit of sundry expense accounts (control and subsidiary accounts in operating ledger *if* cost accounts are maintained).

To clear accounts of the department, at end of a period, of costs of various construction and operating functions during the period, following entries are made:

Department's Books

In the proprietary accounts:

Charge:
  Completed Work
Credit:
  Sundry Expense Accounts
  Clearing sundry expense accounts of amounts expended on work and to gather such expenditures for such work into one cost or expense account.

Charge:
  Central Office
Credit:
  Completed Work
  To clear department's accounts of cost of completed work.

DEPARTMENTAL OFFICE.—Ledgers necessary in those departments which maintain their own expense accounting may be as follows, as determined principally by nature of departmental organization and magnitude and character of operations:

1. Operating (General) Ledger
2. Expense (or Cost) Ledger
3. Stores Ledger

OPERATING LEDGER.—This ledger is to the department what the comptroller's general ledger is to him. Its accounts are the general ones of the department, also those necessary for purposes of control over detailed accounts of such other ledgers as department may be called upon to maintain. It may be the only ledger a department may find necessary to maintain, in which case it becomes simply an expense ledger. For sample see Form 13.

DEPARTMENT OF STREETS AND ENGINEERING CITY OF ______	OPERATING LEDGER ACCOUNT	ACCOUNT NUMBER SHEET NO.

DATE	PARTICULARS	REF.	DEBITS		CREDITS		BALANCE	
				AMOUNT		AMOUNT		AMOUNT

FORM 13. Operating Ledger

DEPARTMENT OF STREETS AND ENGINEERING CITY OF ______	JOB COST SHEET WORK AND LOCATION	JOB NUMBER
	OPERATION	SYMBOLS

DATE	FOREMEN AND CLASS (SEE CODE)	LABOR: CITY LABOR		LABOR: HIRED EQUIPMENT	USE OF CITY EQUIPMENT (USE CODE BELOW)						MATERIAL AND OTHER CHARGES: QUANTITY		DESCRIPTION	PRICE PER UNIT	AMOUNTS		TOTAL COST	WORK COMPLETED: UNITS		COST PER UNIT
		HRS.	AMOUNT	AMOUNT	HRS.	HRS.	HRS.	HRS.	HRS.	HRS.	NO.	UNIT			MATERIALS	OTHER		NUMBER	NUMBER	

CODE LABOR CLASS	CODE—USE OF EQUIPMENT						DATES
SUPERVISION S. ENGINEERING E. OTHER O	TEAMS—DBL. A " —SGL. B ROLLERS—CL. 1 R1 " —CL. 2 R2 " —CL. 3 R3	MIXERS—NO. 1 M1 " —NO. 2 M2 " —NO. —	TRUCKS—NO. 1 T1 " —NO. 2 T2	PERISHABLE TOOLS—N.P. MACHINE TOOLS—P.E.	AUTHORIZED BY SUPERVISION OF CHARGE TO COMMITTED—DATE	BILL NO.	ORDERED WANTED COMPLETED

FORM 14. Cost Ledger

EXPENSE (OR COST) LEDGER.—Where the functions of the department are numerous and much special construction work is performed, as in a department of public works, the cost of the work of the department should be gathered on special accounts, each of which represents an order for a specific piece of work or a particular kind of a continuous and going expense. Such accounts constitute those of the cost ledger. The control of the cost ledger, or the controls of various classes of expenditure represented in the cost ledger accounts, constitutes in such case the greater portion of the accounts of the operating ledger. See Form 14.

STORES LEDGER.—If materials are purchased and delivered to a department in large quantities, and considerably in advance of their consumption, the department should maintain a stores ledger, carrying an account with every kind of article taken into stock. There should be recorded therein all receipts, issues, and the balance on hand, both quantities and values being shown in every case. The control of the stores ledger will be the Stores account in the operating ledger of the department, if separate "stores" are maintained by the department.

CENTRAL STORES.—While advantageous to a city to establish a central purchasing department, for no other reason than to accomplish large economies in purchasing, there are other advantages.

NECESSITY OF STORES AND STORES LEDGERS.—Only approximately correct figures can be obtained in cost and expense accounting if provisions are not made for taking values of materials and supplies used on work into the expense accounts at time of consumption, rather than at time of purchase. Purchases should be charged to the property account, "Stores," and credited to this account and charged into cost or expense accounts of departments using the supplies, only when used. By this method, value of materials remains on books as property until actually consumed.

A **central purchasing and supply department,** independent of other city departments, but buying only upon authority of a requisition from them, should make all purchases and provide and maintain facilities for storage and delivery of all materials and supplies as needed. **Stores depots** may be established throughout a city in accordance with needs and convenience of the several departments, but such stores and the materials should be under control of the supply department—materials to be drawn for use only upon authority of written requisitions from departments.

STORES WORKING FUND (APPROPRIATION).—The **supply department** is furnished by appropriation with a **working fund,** sufficiently large to make any purchase required, or to enable it to comply with terms of any purchasing contract or program city might wish to enter into. From this fund payments are made for all purchases of materials and supplies. **City departments** are also supplied with appropriations for materials in accordance with estimated needs. Procedure is as follows:

1. A department requisitions purchasing department for any materials and such requisitions are recorded as an encumbrance of department's appropriations.
2. Purchasing agent makes the purchase, and on receipt of material has it delivered directly on work, if desired, or taken into stock, subject to future requisition.
3. Payment to vendor is made for material from working fund of the supply department.

4. Department using material gives supply department stores requisitions for amount of materials delivered from stock for use.

5. Supply department reports periodically value of all materials delivered as per department's stores requisitions.

6. A periodical transfer between appropriations for amounts of reports rendered by supply department is made, charging departmental appropriations for amount of materials used and thereby reimbursing supply department's working fund appropriation by value of materials delivered from stock. The encumbrance, by requisition upon department's supply appropriations, is also canceled, since amount of actual transfer charged to the appropriation takes its place in reducing the unencumbered balance after appropriation.

Result of such procedure is that departmental appropriations are charged correctly for value of materials consumed (not purchased), and also they are charged in the period during which it is used. The stores working fund appropriation remains intact, viz., supplies on hand, plus unexpended balance, plus amounts owed by departments, equal total of working fund.

Revenues

CLASSES OF REVENUE.—Revenues of the general fund of a city consist ordinarily of **two principal classes,** viz., those derived from taxation and those accruing through levying of miscellaneous charges of all kinds, for privileges granted, for services performed, and from fines, penalties, forfeitures, interest, etc. The general designation **Miscellaneous Revenues** is given to this second class of receipts. The estimate of what miscellaneous revenues will total for ensuing year, taken in connection with the appropriation for expenditures, determines what amount must be provided by taxation.

Under head of **Taxes** are included:

1. Taxes on real property
2. Taxes on personal property
3. Poll taxes
4. Taxes on business

Miscellaneous Revenues includes receipts from following sources:

Licenses
Permits
Franchises
Privileges
Fees
Fines and penalties
Grants and donations
Rents
Interest
Etc.

TAXES.—Procedure incident to a tax levy is a familiar one, viz.,

1. Fixing of assessed valuation of property, both real and personal, by tax assessors.
2. Determination thereby, in conjunction with the budget, of the tax rate, and
3. Preparation of tax levy, viz., tax-roll delivered to tax collector.

Amount of tax levy having been determined by Department of Taxes, entries in the accounts are:

In the proprietary accounts:

Taxes Receivable
Sundry Accounts (Subledger)
  To Revenues Accrued—Taxes

In the fund accounts:

Available Resources
  To Estimated Revenues
  To Sundry Accounts (Subledger)

For total amounts of tax-rolls in general ledger controls, and in subsidiary ledger accounts, in detail by class of tax.

MISCELLANEOUS REVENUES—DOCUMENTS.—Most of this kind of revenue accrues with issue to individuals, firms, and corporations of permits, licenses, etc., to do certain things or conduct certain businesses for a definite period, subject to stated restrictions, in consideration of which grantee pays to city definite amounts as required by city ordinances governing the case. Evidence of having made such payments, and therefore that privilege specified has been conferred, is usually in some form of printed certificate, or receipt issued by the city official authorized to do so. Protection of the interest of both city and citizen requires that all blank forms which may be issued by city officials for cash can be accounted for, viz., controlled, and control of all revenue from such sources begins with such procedure. General procedure necessary to its control (described hereafter in more detail) is that which provides that each piece of financial stationery that may be issued for cash be separately accounted for from time printer delivers the blank form to the city auditor or comptroller, to time when amount for which the form is issued is received by the treasurer, or collector, of city revenues, or until proof of destruction of the unissued blank is furnished.

STOCK—FINANCIAL STATIONERY.—The storekeeper's record requirements for control of such forms are as follows:

1. That custodian of financial stationery stock (comptroller or auditor) keep a stores account for each form, showing quantities received, quantities issued, and to whom issued.
2. That the official needing financial stationery be required to make a stock requisition therefor and to receipt for amount delivered to him.
3. That when forms are issued for cash, a report of their issue be made to the auditor or comptroller on forms provided (registers) accompanied by a counterfoil.
4. Periodical inventories, by which stock records and quantities in hands of all officials are verified.
5. Proof of receipt of cash by city treasurer through examination by the auditor of receipts and comparison of same with counterfoils of forms issued and reports received by treasurer.

DESIGN—FINANCIAL STATIONERY.—Principal requirements of design necessary to accomplish this are, in general, as follows:

1. Numbering in series and in sequence of each piece of financial stationery printed.
2. That for each original there be a counterfoil, carbon or printed, to be separated from the original at time of issue, and also a carbon triplicate to remain in files of issuing official.
3. A provision, if possible, for mechanical checks (as by marginal indenture) other than carbon copies, by which amount for which form is issued shall be indicated on both original and counterfoil.

Adaptation of this procedure to needs of each special class may be accomplished as described below.

CLASSES OF FINANCIAL STATIONERY.—The typical classes of financial stationery are:

Licenses
Permits
Certificates
Receipts
Bills (invoices receivable)
Tickets
Tags or plates

The two principal groups are those of licenses and permits. The principles stated below as regards methods of control of license and permit forms apply in general by adaptation to other financial stationery. Details of handling depend upon local regulations and conditions.

LICENSES.—These are documents evidencing formal grants or permissions by persons in executive or administrative authority to persons or corporations to conduct classes of business, to pursue kinds of occupations, and to perform acts and enjoy rights, which persons or corporations, by reason of police regulations enacted or imposed, could not conduct, pursue, perform, or enjoy except for such authorization.

They fall into **main groups** as follows:

1. Those wherein price is based on but one factor and does not change.
2. Those wherein price is based on two or more factors and varies.
3. Those wherein, price being fixed, date of expiration varies.
4. Those wherein price, based on two or more factors, varies and date of expiration also varies.

To whichever group the license belongs, the printed form on which it is issued should conform, for purpose of control, to following mechanical specifications:

1. That it be so designed and printed that three copies, original and two carbons, may be produced at one writing. Stubs not provided in any case.
2. That the three copies all bear one document number, which shall be in sequence in a series of numbers.
3. If either amount for which issued or date of expiration can vary, original and duplicate (counterfoil) should be on one piece of paper, and provision for indicating such varying amount or date, or both, by a marginal indenture should be made.
4. If amount or date of expiration, or both, are fixed, print the constant factors on the form. No indenture necessary for the constant factor.
5. Each form should be so drawn that it may be used for as many different kinds of licenses in the same general class and issued by the same office, as possible, thereby avoiding multiplication of forms.
6. Original and counterfoil should be printed on safety paper.
7. Books (or pads) should be bound in sets, preferably in multiples of ten.

The **original** is the document delivered to grantee. The **duplicate** (or counterfoil) should ultimately reach the central accounting office (either direct or through the treasurer) for audit purposes, while the **triplicate** (second carbon) remains in the files of the issuing office as its record of the transaction.

PERMITS.—These are the documents evidencing formal grants or permissions by persons in executive or administrative authority for performance of special acts, the nature of which is specifically defined by terms of the instrument conveying such grants, and performance of which acts terminates the grants.

They fall into **main groups** as follows:

1. Those issued in consideration of payment of fixed amounts.
2. Those issued in consideration of payment of amounts, which vary according to conditions.

The printed form on which the permit is issued should conform for purposes of control to the same mechanical specifications as stated for licenses. The **original** of the permit is the document to be delivered to the payee. The **duplicate** (or counterfoil) should ultimately reach the central accounting office (either direct or through the treasurer) for audit; while the **triplicate** (second carbon) remains in files of issuing office as its record of the transaction.

CERTIFICATES.—Acknowledgment of receipt of money and compliance with requirements are issued by the city in form of certificates, generally to be posted by payee in some conspicuous place for public inspection. Reason for issue of a certificate is analogous to those attendant upon licenses and permits, and varying factors of amount and periods exist as with licenses and permits. Such being the case, the same principles of design of form and procedure in issuing the certificate hold as with licenses and permits—viz., the certificates should be issued in triplicate, bear document numbers in sequence, have indentured margins where necessary, and be printed on safety paper.

RECEIPTS (OR TICKETS).—In general, receipts are issued by various officials, for amounts received for sundry services rendered by the city—as by the weighmaster for use of public scales, by marketkeeper for fees paid for stalls, etc.—being usually for small amounts and for services or privileges which do not justify any great amount of formality but for which it is at the same time strictly desirable to provide a check upon the official receiving the money, whether in large or small amounts.

Whenever such conditions exist, these methods should be followed:

1. Print the receipts—wording being adapted to particular case in hand—on sheets of five or ten receipts each, and print on each receipt its own distinctive document number.
2. Arrange sheets of receipts in sets of three sheets each, as "Original," "Duplicate," and "Triplicate," all to be produced through use of carbon sheets at one writing, and each sheet bearing the same ten numbers.
3. Original sheet should be perforated so that each ticket may be separately detached. The duplicate sheet should be perforated only along binding edge and detached only as a whole. Triplicate sheet is not perforated at all but remains bound in books and takes place of a stub.

Original receipt or ticket is given to payer. **Duplicate sheets** accompany cash deposits with treasurer (in proof of correctness of deposits) and are delivered by treasurer to comptroller for audit and entry in financial stationery accounts **Triplicate** is the issuing office record in lieu of stubs.

This form should be specially worded for the office using it, only where amount of receipts justifies so doing. There should also be a general form, so worded as to be generally usable wherever cash receipts do not justify a special form. It should be made obligatory that wherever cash is received, no matter how small amounts may be, this receipt method of procedure be observed, if other special forms of financial stationery are not used to evidence such receipts.

In offices issuing **tags**, or plates bearing numbers in sequence, to evidence compliance with city requirements and payment of money, as for licenses for vehicles, autos, dogs, etc., issuance of tag should be accompanied by a receipt. wording of latter being adapted to the case in hand, numbers of documents issued being same as those of tags or plates issued.

Paper stock used for receipt forms should be of such weight as to permit two good carbons being easily produced. For **original** and **duplicate**, paper should be used of some particular brand or make watermarked for the city, and purchased under conditions such that only the city is able to obtain it. The **triplicate** may be on most ordinary paper.

BILLS (INVOICES RECEIVABLE).—For other miscellaneous cases, which are pre-billed, where amount of charge made by city is accrued in advance of its receipts, an **invoice** should be rendered for amount due and a controlled form of financial stationery should be used in doing it. Use of such a form will be for special and varied services for which no other form has been devised. The **form** should be that of an invoice, **original** and **duplicate** (counterfoil) printed on same piece of paper, with provisions for marginal indenture of amount of bill between counterfoil and invoice, just as with licenses and permits. Provision for a **triplicate** should also be made.

The **form in triplicate,** viz., original, duplicate (counterfoil), and triplicate, each copy bearing same printed document number, should be **bound in pads** (or books, if more convenient, as it would be for use in making rounds for collecting rents). **In use,** the invoice in triplicate is prepared and accrual of indebtedness is registered in an accrual register. The duplicate (counterfoil) is then detached, amount of invoice being indicated, in doing so, through use of the indentured margin, and original is delivered to the grantee.

The **counterfoils** are filed in office of the official who is to receive payment from payer. In many cases this is the office of the treasurer; but if some other official collects the cash and remits it to the treasurer, counterfoil remains with him until bill is paid, and is then sent to treasurer with the cash. Invoices being paid and receipted, counterfoil is also stamped paid and ultimately reaches the comptroller through the treasurer for audit. The triplicate copy always remains as the record of the issuing office.

Wording of the invoice, as well as the size, should be adapted in all cases to needs of the office issuing it. The **principles to be followed** are to control use of the invoice form by departments and provide for return by the collecting official of an indentured counterfoil previously registered and charged in some revenue or accounts receivable account.

CONTROL OF REVENUE.—Inasmuch as **miscellaneous revenues** of a city are received through many divisions of a city's organization, the real control of a city's accrued revenues of this class begins with control of issue of financial stationery and proceeds from that point, as shown below.

REGISTER OF REVENUES RECEIVABLE.—The daily reports of city officials issuing any kind of financial stationery, for cash or for future payments, are in form of a **register sheet,** similar in ruling to the schedule of revenues accrued and accounts receivable illustrated in Form 15, made in triplicate, and showing essential information as regards the form (document) issued and amount collected or to be collected at some future time. One copy of the **daily schedule,** together with cash collected, is sent to the treasurer; the other to the central accounting office with the counterfoils of financial stationery issued; third copy remains in office of issue.

Summary registers of revenues receivable committed, compiled from daily reports of officials and maintained in the central accounting office, gather classified monthly totals of such daily revenue commitments. These monthly totals of revenues receivable accrued are then taken up monthly in control accounts, and details posted daily (if desired) to subsidiary ledgers.

Whenever revenues accrue from any source, in connection with the activ-

CITY OF ____________

AUDITOR'S REGISTER OF REVENUES AND ACCOUNTS RECEIVABLE ACCRUED

SHEET NO. ______

COLLECTING OFFICIAL FUND MONTH ____________ 191__

PARTICULARS					SUNDRY RECEIVABLES			MISCELLANEOUS REVENUES			SPECIAL ASSESSMENTS			RECOVERED EXPENDITURES		
DAY 1	ENTRY No. 2	DEPARTMENT 3	DEPT Nos 4	FOR 5	AMOUNT 6	√	ACCOUNT 7	AMOUNT 8	√	ACCOUNT 9	AMOUNT 10	√	ACCOUNT 11	AMOUNT 12	√	ACCOUNT 13

FORM 15. Register of Revenues and Accounts Receivable (in triplicate)

CITY OF ____________

AUDITOR'S REGISTER OF ENCUMBRANCES OF ____________

CODE

SHEET NO.

DEPARTMENT ______ DIVISION ______ OFFICE ______

DATE OF ENTRY	ORDER OR CONTRACT NUMBER	NAME	CODE		√	AMOUNT OF ENCUMBRANCE	DATE LIQUIDATED	DISTRIBUTION TO FUNDS				
			DEPT	ACCT				GENERAL ACCOUNT	CAPITAL ACCOUNT	SINKING FUNDS	SPECIAL AND TRUST FUND ACCOUNTS	
											AMOUNT	FUND
		FORWARD										

FORM 16. Register of Encumbrances

ities of any division of the city organization, but without immediate collection of the cash, the same daily system of reporting accruals, immediately the accrual amount is known, whether collected or not, should be required, exactly as if cash were collected.

Accounting for revenues should not be on the cash collected basis (as is generally the case), but on the basis of accruals, whether cash is collected or not collected, at time of accural.

Entries necessary to place accruals of miscellaneous revenues in the accounts are similar to those for taxes. **Detail accounts** of the subsidiary ledger—revenues and accounts receivable—should be in accordance with sources from which revenues are received.

Cash receipts reported through daily commitment sheets from various city officials, also summarized to obtain monthly classified totals, furnish monthly entries, as follows:

In the proprietary accounts:

Cash
To Taxes Receivable
To Sundry Accounts (Subledger)
To Revenues Receivable Miscellaneous
To Sundry Accounts (Subledger)
To Accounts Receivable
To Sundry Accounts (Subledger)
For monthly totals in general ledger control accounts, and in detail in subledger accounts.

In the fund accounts:

Unapplied Cash
To Available Resources
For total cash collections of the month.

REVENUES AND ACCOUNTS RECEIVABLE LEDGER.—This ledger contains detailed accounts to which all accruals of revenue are charged and all cash receipts and all abatements or adjustments are credited. A separate account should be maintained with each source of revenue. The **controls** of detailed accounts in this ledger are in these general ledger accounts:

Revenues Receivable—Real Estate Taxes
" " —Personal Taxes
" " —Miscellaneous Sources
" " —Water
" " —Etc.
Accounts Receivable

Entries involved in setting up the accounts of the ledger are as follows:

In the proprietary accounts:

Charge:
Revenues Receivable—Real Estate Taxes
Revenues Receivable—Etc.
Accounts Receivable
Credit:
Revenues Accrued—Taxes
Revenues Accrued—Water
Revenues Accrued — Miscellaneous Sources
Recovered Expenditures
Miscellaneous Sales
Etc.
Entered in total, monthly (from sundry registers) in the general ledger control accounts; entered in detail as accrued, in subsidiary ledger accounts.

In the fund accounts:

Charge:
Available Resources
Credit:
Estimated Revenues
Entered in total monthly, in general ledger accounts, for total of revenues accrued; entered in total monthly, in subsidiary accounts of estimated revenues.

Expenditures

PROCEDURE.—Authorization to spend city money carries with it restrictions which city officials must constantly keep in mind. The restrictions are appropriations, or resolutions authorizing bond issues, or agreements by which the city stands in the position of trustee or agent. Each transaction of a municipality has relation to some legal reservation, viz., is related to some one of the appropriation or fund accounts. Each amount of cash disbursed, each payable account, each liability, belongs to or encumbers one or more appropriations or funds and must be stated in connection with some fund and appropriation, to protect the city from making unauthorized expenditures.

The procedure in connection with expenditures involves the following **documents:**

Requisitions on Stores	Pay-Rolls
Requisitions on Purchasing Agent	Vouchers } or Voucher Warrants
Purchase Orders and Contracts	Warrants } or Voucher Warrants
Invoices of Claimants	

The principal points wherein the above-named documents differ in form or use from forms in use in private corporation practice, are the provisions, few or many, which must be made to comply with legal requirements peculiar to a municipality, as regards certificates, approvals, and procedure of officials through whose hands the documents must pass. These requirements vary greatly in different states and cities, and frequently put most efficient brakes upon speedy transaction of business, in addition to the complicated procedure they make necessary.

Samples of the principal documents named are shown below, and procedure developed for form illustrated is described where peculiarities are sufficient to warrant descriptions.

REQUISITION ON STORES.—The only pecularity of this form is the certificate required.

REQUISITION ON PURCHASING AGENT.—The peculiarity in the use of this form is that in all cases it must bear an estimate of the probable expenditure or actual amount, and at least one certificate of a properly authorized official, that the expenditure is proper and necessary, etc.

PURCHASE ORDER.—Before the purchase order can be placed, a procedure including requests for bids, and consideration of quotations, etc., is usually required for expenditures involving appreciable amounts (over $25 in many cases).

Having reached a decision as to where to place the order, a purchase order in quintuplicate is prepared. The **disposition of purchase order copies, as follows,** is typical of the usual practice:

Original.................To vendor.
First copy..............Retained by purchasing agent.
Second copy............To central accounting office.
Third copy..............To department that placed the requisition.
Fourth copy............To the inspection department.

It is essential that the order indicate an amount to be expended—actua if known, estimated if necessary—and that before it is issued to vendo it be submitted to the responsible accounting officer for certification tha

the unencumbered balance of the appropriation to be charged is sufficient to satisfy the claim when presented.

The order should not be valid without such **certificate.** This step is necessary to prevent departmental officials from obligating the city for amounts beyond limits of authorized appropriations, viz., to control budget expenditures.

Accounting Procedure.—The accounting officer, if he certifies to sufficient funds in the appropriation, retains his copy of the purchase order and returns the remaining copies to the office of issue for delivery of the validated order to vendor. If funds are not sufficient, he cancels the order.

The amount by which the appropriation is encumbered by the order is charged, if approved, to the appropriation under the caption "Register for Encumbrance" (see appropriation ledger sheet, Form 11, page 1235), and the order is registered in the register of incumbrances (see Form 16), which provides the periodical total credited to the reserve account. The order is then filed to await claimant's invoice when presented for audit.

INVOICES.—The invoice is to be considered as a statement of the claim rendered by a claimant who has furnished supplies or materials, or who has rendered service to the city, said statement of account being the basis for settlement of claims for goods delivered or services rendered. To secure uniformity, a **standard form of invoice** with as many copies as are necessary (at least in triplicate) is needed, and all claims against the city except those for salaries and wages for which pay-rolls are provided, should be stated on this form. As each purchase order is issued, a sufficient number of nvoices for purchases made are enclosed to claimant.

INVOICE CERTIFICATIONS.—As an example of the number of certifications which may be required where the idea of multiplying them has been well developed, the following list of certifications is presented.

Oath of claimant:

State of................, City and County of..............., ss.

The undersigned, being first duly sworn, deposes and says, that he is authorized to make and file this affidavit; that the within account is true and just; that the amount is due from the City and County of ...., and that this bill has not been previously presented or paid, either in whole or in part.

....

Representing..................................

Subscribed and sworn to before me this

..........day of.........19..

....

Attesting Officer

Certificate of commissioner of supplies:

I hereby certify that the prices on this invoice are reasonable and just and in accordance with the order, and that I have a properly approved requisition on file authorizing the expenditure.

....

Commissioner of Finance, Ex-Officio
Commissioner of Supplies.

By..............................

Deputy

Certificate of person receiving goods or responsible for performance of service rendered:

I hereby certify that the claim specified herein is for articles received, services rendered, or amounts expended for the City and County of................, and that the quality of articles received, or services rendered, was as ordered.

Certificate of head of bureau or division:

Approved..................................

Certificate of head of department:

Upon information contained in the foregoing certificate, which I believe to be correct, I hereby approve this invoice for payment.

....

....

Approval of council:

At a meeting of the Council of the City and County of................ on............ this invoice was read and allowed.

....
Commissioner of Property, Ex-Officio Clerk of the City and County of
....

By........................
Deputy

Approval of board:

Office of.................................., 19... Approved, and the Auditor is hereby authorized to issue a warrant in payment of the account. By order of the Board.

....
Secretary

Certificate of auditor:

This claim having been properly audited and approved is now allowed and ordered paid from..................................Fund.

....
Auditor

By ....
Deputy Auditor

The typical procedure followed with the invoice illustrated requires claimant to send two copies of his claim to the commissioner of supplies and third copy to the accounting department. Space is provided as shown for oath of claimant such as is required in many cities, and for various certificates and approvals required of officials, bureaus, and boards before the expenditure claim can be paid.

ACCOUNTING PROCEDURE—INVOICES.—When original invoices are forwarded by the departments to the accounting department, they are audited, registered in the register of accounts payable, and postings are made from the invoices directly to the accounts of both appropriation and proprietary circles. The encumbrance of appropriations by the amount of the corresponding purchasing orders is canceled.

PAY-ROLLS.—Municipal pay-rolls differ little from those of private corporation pay-rolls except in the variety and number of certifications required. The possibilities in this line are shown in the following requirements as to certificates:

CERTIFICATIONS FOR OFFICE PAY-ROLLS.—

A. Certificate of municipal civil service commission:

I hereby certify that this Pay-Roll Sheet has been examined and that the persons named hereon have been appointed or employed or promoted in pursuance of law and of the rules made in pursuance of law, with the exception of those marked thus X.

Date.......................................

....

B. Certificate of examiner, auditor's office:

I hereby certify that this Pay-Roll Sheet has been examined and that it is correct as to calculations, extensions, and proper certifications.

Date.......................................

....

C. Certificate of timekeeper:

I certify that the above Pay-Roll is correct and that the services were rendered as stated, exclusively for the City and County of ...., with the exception of leave of absence granted by proper authority.

Date.......................................

....

D. Certificate of official in charge:

I certify that to the best of my knowledge and belief, the above Pay-Roll is correct and just, and I approve the payment thereof.

Date.......................................

....

E. Certificate of head of department:

Approved and warrants ordered by the.......................................

Date.......................................

....

....
Secretary.

F. Certificate of auditor:

Audited and allowed.

Date.......................................

....
Auditor

....
Deputy Auditor

CERTIFICATION FOR LABOR PAY-ROLLS.

A. Certificate of municipal civil service commission:

I hereby certify that this Pay-Roll Sheet has been examined, and that the persons named hereon have been appointed or employed or promoted in pursuance of law and of the rules made in pursuance of law, with the exception of those marked X.

Date.......................................

....

Certificate of auditor's examiner:

I hereby certify that this Pay-Roll Sheet has been examined, and that it is correct as to calculations, extensions and proper certifications.

Date.......................................

....

Certificate of timekeeper or person who makes up the pay-roll:

I certify that the time credited to each person whose name appears in the above Pay-Roll correctly represents the time such person worked for the City and County of . . . . , as shown by certified time records on file, and that the rates of pay and amounts due are correctly stated.

. . . .

Title

Certificate of foreman or person in immediate charge of the labor:

I certify that I have been in charge of the persons, whose names appear on the above roll during the period indicated; that the labor has been performed, as stated, solely for the City and County of . . . .

. . . .

. . . .

Title

Certificate of head of department:

I certify that to the best of my knowledge and belief, the above Pay-Roll is correct and just, and I approve the payment thereof.
(In lieu of oath.)

. . . .

Head of Department

Certificate of auditor:

Audited and allowed.

. . . .

Auditor

. . . .

Deputy Auditor

ACCOUNTING PROCEDURE—PAY-ROLLS.—When properly certified pay-rolls are received in the accounting department, and invoices payable forms showing distribution of pay-roll are prepared and registered in the register of accounts payable. From such invoices the various appropriation and expense accounts are charged, procedure being same as for a vendor's invoice (see procedure under "Invoices").

VOUCHER WARRANTS.—The voucher warrant of a municipality differs from the voucher check of private corporations only in that it usually requires more approvals (certifications) and is required to pass through a longer routing before payment. It is a statement of account with claimant with a warrant on the treasury attached, which warrant may become a check through entry by treasurer's office of name of bank at which it is desired to make it payable, and attachment of the official signature of the treasurer.

Warrants are usually prepared in the central accounting office, and after passing through the requisite number of offices as legally prescribed, reach the treasurer's office. In other cases, after proper approvals, they are delivered directly to claimant and only reach the treasurer when presented by a bank which demands payment from the treasurer, who satisfies the claim by issuing his check.

REGISTERS.—The usual registers of documents from which totals are taken into the accounts are:

Register of Purchase Order and Contracts
Register of Accounts Payable (Claims)
Register of Audited Vouchers
Register of Warrants
Register of Warrants Paid

Where a department of purchase and supplies is maintained through "revolving funds," which is replenished from the material and supply appropriation of other departments, a register of requisitions on stores is also necessary, since such requisitions are encumbrances of departmental appropriations exactly as are purchase orders, and should be recorded as encumbrances.

REGISTER OF PURCHASE ORDERS.—This record is maintained by the central accounting office and the purchase orders certified (see under "Purchase Orders") as regards appropriation available, are registered therein. See Form 16, page 1246.

REGISTER OF ACCOUNTS PAYABLE.—The departmental offices register their approved invoices (claims) on this form (in duplicate) and forward one copy with invoices listed to the central accounting office. The form provides on its reverse for showing distribution of amounts of invoices listed to both appropriation and expense accounts. See Form 12, page 1236.

The central office then audits the claims, and posts amounts directly to the appropriations and expense accounts charged, on reverse of the sheet. After posting the accounts, central office makes up vouchers (or voucher warrants) in satisfaction of claims, or files the invoice to await vouchering at some future date.

Commitment totals are then registered, a separate register being maintained for each committing office to obtain totals for monthly entries in controlling accounts. The practical way of maintaining such summary registers is through the use of a **standard form of analysis sheet,** which may be headed for any analytical or summary use to which it is desired to put it.

Closing the Books

PROCEDURE.—Closing the books is the last step in accounting for the fiscal year, but as a matter of practice, in opening a set of accounts for the new year with a new budget, it is necessary to close the books and bring forward the balances before opening entries for new year can be made in the fund and appropriation accounts.

The status of affairs at end of the year usually shows a balance of Cash, Uncollected Taxes, Accounts Receivable, and an unexpended Balance of Appropriations. Many of the appropriations remaining may terminate with the end of the year and also many may continue into the next year or even longer, due to contracts or obligations assumed.

When the correct status of affairs is determined, following entries should be made, assuming complete new ledger is opened up for both proprietary and fund accounts:

In the proprietary accounts:

Cash
Revenues Receivable (by years)
Accounts Receivable
Stores
    To Warrants Payable
    To Accounts Payable
    To Reserves
    To Surplus

In the fund accounts:

Unapplied Cash
Available Resources
    To Appropriations (by years)
    To Estimated Revenue

The proprietary entry needs no explanation. Under the fund entry

"Unapplied Cash" is the difference between actual cash on hand and immediate demands for cash represented by the Warrants and Accounts Payable.

Available Resources is the difference between Revenues Receivable, Accounts Receivable and Stores, and the Reserves.

The credit to Estimated Revenues is the balance left after deducting appropriations continued and brought forward, from sum of Unapplied Cash and Available Resources.

Frequently there is a deficit, when the debit Available Cash becomes a minus quantity, and is shown on liability side of fund statement.

SECTION 26

OFFICE APPLIANCES

CONTENTS

SECTION 26

OFFICE APPLIANCES

TYPES OF MACHINES AND ACCESSORIES.—It is not the province of this handbook to express preference for particular types of appliances, but rather to generalize by classes. The descriptions of the various devices listed were received from those who responded to invitations extended to practically all known manufacturers.

The following classification, based on functions of machines, will be followed:

1. Mechanical devices
   - Dictating machines
   - Automatic cashiers
   - Cash registers
2. Calculating machines
   - Adding
     - Non-listing
     - Listing
   - Multiplying and Dividing
3. Time recorders
4. Dating and numbering machines
5. Tabulating and sorting machines
6. Typewriters:
   - Letter-writing
   - Letter-writing multiple
   - Bookkeeping and calculating machines
   - Bookkeeping and calculating machine accessories
7. Protective and perforating machines
8. Addressing and mailing apparatus
9. Miscellaneous

MECHANICAL DEVICES.—

Dictating Machines—Dictaphone and Ediphone.—Both the Dictaphone and the Ediphone manufacturers present tables showing savings effected by dictating machines as compared with dictation to stenographers. In using dictating machines dictation is recorded on wax cylinders which take the place of stenographers' shorthand notes. After dictation the cylinders are delivered to the typist and transcribed by use of a reproducing or transcribing machine. Some of the more recent improvements in dictating machines are:

Visible recording, a pointer showing exactly where the recorder or reproducer point is.

Automatic switch—the motor is started by removing speaking tube from its hook and stopped when tube is replaced.

Cylinder ejector—a lever which loosens cylinder and pushes it to a position where it can be removed without touching the surface.

Automatic back spacer, enabling dictator to "listen back" to the last few lines of dictation.

Automatic forward spacer, returning carriage to the correct position for resuming dictation.

Pneumatic foot control, controlling starting and stopping of cylinder in transcribing.

Sound modifier, controlling volume of sound.

Pitch, regulating speed for transcriber's convenience.

The following table gives a comparison of dictaphone with stenographic work:

Comparison of Dictaphone Work With Stenographic Work

(Made by New York Central Railroad)

Basis: Work done by stenographers during the month of November, 1920.
Work done by Dictaphone Operators during the month beginning two weeks after Dictaphones were installed.

Dept.	Stenog.	Dict. Oper.	Letters One Mo.	Cost per Letter	Monthly Pay-Roll	Yearly Saving
Auditor	6.3	......	5,010	14.33¢	$ 718.20	
Passenger accounts	....	3	4,060	8.42¢	342.00	
Saving	3.3	......	....	5.91¢.	$ 376.20	$ 4,514.40
Auditor	13.1	......	10,666	14.00¢	1,493.40	
Revenue accounts	....	7	10,386	7.68¢	798.00	
Saving	6.3	......	....	6.32¢	$ 695.40	8,344.80
Auditor	12.0	......	11,138	12.29¢	1,368.00	
Freight accounts	....	7	11,933	6.68¢	798.00	6,840.00
Saving	5.0	......	....	5.61¢	$ 570.00	$ 19,699.20

Annual space released 560 sq. ft. @ $3 per year for other purposes			1,680.00
Total Annual Saving			$ 21,379.20
Pay-Roll and Space Saving over a 5-Year Period			$106,896.00
Cost of Dictaphone Equipment:			
40 A–7 @ $195.00		$7,800.00	
17 B–7 @ 180.00		3,060.00	
2 SU @ 85.00		170.00	
		$11,030.00	
Less 15% quantity discount		1,554.50	
		$ 9,475.50	
Less Competitive machines in exchange	$ 165.00		
Less Equipment Released:			
14 Typewriters	$1,260.00		
14 Desks	700.00		
14 Chairs	252.00		
		$2,377.00	
Net Cost of Equipment		$7,098.50	
Cylinders, 2,000 per year @ 40¢, 5 years		4,000.00	
Total cost			11,098.50
Net Dictaphone Savings for 5 years			$95,797.50

Automatic Cashiers.—The Brandt Manufacturing Co., Watertown, Wis., furnish automatic cashiers of two types:

The **paying machine,** which pays out sums of 1 cent to $5 (silver), inclusive, by pressure of one key for cents and one for dollars. Used by banks and in industrial concerns on pay-roll work. Models 60, 62, 64, 68.

The **change-making machine,** which pays out correct change when amount of sale is recorded by pressure of one key for cents and one for dollars. Capacity, 1 cent to $5. Models 61, 63, 69.

Use of automatic cashiers is advisable wherever currency transactions involving change are numerous. Such use tends to promote both accuracy and speed.

The question of the advisability of handling silver dollars is one to be decided by individual preference, being governed more or less by geographical location. Models 60 and 61 have capacity of from 1 to 99 cents.

Cash Registers.—

National Cash Register Co.
Standard Register Co. autographic
Shoupaligner Autographic register
International Accounting Machine Co., automatic bookkeeping system
McCaskey Register Co.
Add Index Corp.

The product of the National Cash Register Co. covers a wide field, from peanut stand to bank. As originally furnished, cash registers consisted of a combination of a cash drawer operated by keys, with a window through which amount of sale was visible when keys were operated and a strip in the machine which recorded all amounts registered. From 1885 to present time cash registers have developed until now when, with what is termed the accounting machine, as many as 30 classifications can be recorded. A description of all machines manufactured by the National Cash Register Co. would be impractical in the limited space available, but readers desiring further information can obtain it at any of the numerous branches and agencies of the company.

Autographic registers, of which there are several types on the market, are used for recording either cash or credit sales, guaranteeing exact and complete records of every transaction without transcription. Some of the uses for autographic registers, as stated by the manufacturers, are:

Cash, charge, and C. O. D. sales	Gasoline and oil sales
Accessory and tire sales	Parts sales and repair orders
Battery service and supplies	Stockroom requisitions
Brokerage customers' orders	

By making several copies at one writing, this form of register facilitates obtaining of customers' signatures to orders, etc.

The **autographic register,** in many small businesses, supersedes the scratch-pad and assures the recording of transactions which otherwise might be overlooked with resulting loss to the business.

Two of the best-known autographic registers are: the **Shoupaligner,** manufactured by the Autographic Register Co., Hoboken, N. J., and the **Standard,** manufactured by the Standard Register Co., Dayton, Ohio.

Devices which combine the functions of cash and charge registers are: the **Automatic Bookkeeping Machine,** manufactured by the International Accounting Machine Co., New York City. The **McCaskey Register,** manufactured by the McCaskey Register Co., Alliance, Ohio. The **Add-Index**

Cash Register, manufactured by the Add Index Corp., 120 Broadway, New York City.

The automatic bookkeeping machine combines the essential features of a cash register, credit register, and an adding machine in one unit, which, together with a special accounting book, make a completed simplified bookkeeping system suitable for the general run of retail store trade.

CALCULATING MACHINES.—

Adding Machines—Non-Listing.—The oldest form of adding machine or device and one still in constant use in oriental countries is the **abacus,** the bead frame seen in use in Chinese stores. The form of this device used by the Japanese consists of a frame divided into two sections, the upper containing a line of single beads each representing 5, according to its column; in the lower section each column has five beads each representing 1 according to its column. The combination of the two sections makes each column represent 10. Many orientals are experts in using the abacus for all calculations for which a non-listing adding machine is suitable. The two principal non-listing machines in general use are: the **Comptometer,** manufactured by Felt & Tarrant Co., Chicago; the **Burroughs,** manufactured by the Burroughs Adding Machine Co., Detroit, Mich.

Comptometer—statement by the company:

The **Comptometer** is a high-speed, direct-acting, easily portable desk machine for both adding and calculating.

As an adding machine, it meets the most exacting requirements of speed, accuracy, and ease of operation on all additions and subtractions.

As a calculating machine, it is equally practical and efficient on all other figuring—multiplication and division.

The comptometer is operated by keys, the values of which when struck are instantly recorded in the answer register. Thus, every operation is performed by simply striking the keys.

For safeguard against human element of error in operation, two exclusive features are provided: First, the "controlled-key"—a positive system of automatic control, which compels correct mechanical operation of the keys, thus avoiding a chance of error from incomplete key-strokes. Second, the "clear" register signal which does away with the danger of forgetting to "clear" the register before starting a new problem.

The comptometer is furnished in three sizes—8, 10, and 12-columns, and also with special columns for the addition of fractions, such as, quarters, eighths, twelfths, etc. However, all additions, multiplications, divisions, subtractions in whole numbers or fractions, decimally expressed, can be handled on the regular decimal comptometer.

Burroughs—statement by the company:

The **Burroughs Calculator** is a very light and compact key-driven machine. It differs somewhat from former machines of this type as it permits of much higher speed operation than any previous key-driven machine.

The accuracy of all key-driven machines depends upon the ability of their accumulating section to function at all times under every conceivable kind of operation.

The lever controls and spring actuated detents have been replaced in the new model Burroughs Calculator by a gear train, the members of which are always in mesh and consequently no speed is too great nor any interruption too serious or severe to affect the accuracy of its calculation.

The actuator or operating section of the machine provides a novel and unique means of operation as it affords the greatest resistance at the top of the key stroke, providing an acceleration of action which makes for high speed and accurate operation.

In the Burroughs system of operation many new features have been introduced, it being conceived by the Burroughs Co. that a greater simplification of operating methods would feature a broader distribution of the machine. Burroughs machines are used extensively by public and private schools for the teaching of commercial arithmetic and for the instruction of students in vocational work.

Burroughs Calculators have been sold covering a period of 12 years and although a large percentage of the first machines manufactured are still in daily operation, improvements in the design and refinements in manufacture warrant our believing that the new machines may be operated over a much longer period with a very nominal cost for upkeep.

Burroughs Calculators are built to handle English currency, also other fractional amounts such as fourths, eighths, and twelfths, also hour and minute machines for use in pay-roll work.

The Burroughs Calculator is particularly adapted to division and is used extensively for figuring percentage.

Adding Machines—Listing.—There are many listing machines on the market, some of the principal being:

The Burroughs	The Victor
The Add Index	The Dalton (10-key)
The Wales	The Sundstrand (10-key)

These machines are all **key-operated,** the lists being usually printed on a roll of paper passing over a **platen.** In some types provision is made for listing on sheets inserted, as in a typewriter. The usual type of listing machine has 81 adding keys, with special keys for sub-totals, totals, repeat, non-add, non-print, and correction. The **Burroughs** machine is made in many different sizes for various purposes; their 15-bank machine has 135 adding keys. The adding and printing mechanism in most listing machines is operated either by hand or electrically.

The **10-key machines, Dalton** and **Sundstrand,** have the advantage of operation by the **touch method,** which is practically impossible with full bank machines. In case of full bank machines all ciphers are printed automatically; with 10-key machines all figures, including ciphers, must be key-printed.

Multiplying and Dividing Machines.—Most of the adding machines can be used for multiplication and division, because multiplication is a short method of adding the same number many times and division is a series of subtractions. There are, however, certain machines which are better adapted to multiplication and division than to addition and subtraction, and vice versa. Some of these machines are:

The **Ensign,** driven by hand or electrically, manufactured by the Ensign Co., Boston, Mass. This is a key-operated machine with a capacity of 9 x 7 figures, giving the result in 16 places.

The **Madas** is manufactured in Zurich, Switzerland. It is of **two types,** the **slideboard** and **keyboard,** with a capacity of 9 x 9 figures, giving the result in 16 places. It is furnished with either hand or electric drive.

The **Marchant,** which is marketed by the Marchant Calculating Machine Co., Oakland, Calif., is furnished in 3 models, 6 x 6, with result in 12 places; 8 x 8, with result in 16 places; and 9 x 9, with result in 18 places. It is a key-operated hand-driven machine. A special feature with this machine is its expandability, as the smaller models can be changed to larger by the addition of certain sections.

The **Mercedes** is made in 4 models. Model 1 is a crank-operated machine with slide-setting arrangement and has a capacity of 9 x 9, with provision for 16 digits in the result. Model 4 is practically the same as model 1, with the exception that keys take the place of slide operation. Model 5, the Mercedes "Triplex," combines the features of model 1 with 2 additional dials for accumulating the group totals, etc.

Model 7 combines the features of models 1 and 5, with electric operation. The makers claim the additional speed of operation will equal the work of from 2 to 5 hand-operated machines and with greater accuracy. Model 8

is an electrically operated model 4. The makers claim that this model is the fastest adding machine on the market, and that it also subtracts direct.

The **Millionaire**, manufactured in Zurich, Switzerland, is furnished with the following capacities:

6 x 6 x 12 digits, slideboard or keyboard, hand-operated.
8 x 8 x 16 digits, slideboard or keyboard, hand- or electric-operated.
10 x 10 x 20 digits, slideboard or keyboard, hand- or electric-operated.

A special feature of the Millionaire machine is a lever which is set for the number of revolutions required, thus necessitating only one turn of the crank for each figure in multiplier or divisor.

The **Monroe Calculating Machine** is manufactured at Orange, N. J. The Monroe is furnished in three capacities, based on the number of digits in the results: 12-place = 6 x 6; 16-place = 8 x 8; 20-place = 10 x 10. For the average business the 16-place probably has sufficient capacity. The Monroe is a keyboard machine and it is claimed can be used to equal advantage for addition and subtraction, or for multiplication and division.

There has recently been introduced the **Automatic Monroe,** electrically operated. It is claimed that the light motor does not seriously affect its portability as it can be used either on the desk or on a stand as desired. Increased ease and speed of operation are also claimed for the automatic. Automatics are furnished in two sizes, 20-place or 16-place, and for either direct or alternating current. Of the hand-operated machines referred to, all but the Marchant and Monroe are operated by a horizontal movement of the crank. The hand-operated Marchant and Monroe are operated by a vertical movement of the crank. Other machines in the vertical operated class are: the **Brunsviga,** the **Triumphator,** and the **Lehigh.**

In selecting a calculating machine due consideration should be given to quietness of operation.

SLIDE RULES.—Many operators have become very expert in the use of various forms of slide rules, especially where "round figures" suffice. Probably one of the types of slide rules most suitable for office work is that known as **Thacher's Calculating Instrument.** In considering the adoption of slide rules for continuous work the matter of eye strain should be given consideration.

TIME RECORDERS.—The chief reason for including time recorders in this accountants' manual is the use by the accounting department of the records produced. Time recorders are of several different types, the principal being card recorders and strip or sheet recorders.

Card recorders are of two general types, those which record in-and-out time, usually located at the entrance to the factory or preferably at the entrance to each department, and what are known as **job recorders,** which are either located at convenient points in the departments for use by the workers, or at central points where the recording is done by clerks on receipt of advice from workers by signal.

Strip or sheet recorders are so arranged that on the insertion of a key (original **Bundy**), by the pressure of a punch on an arm operating on a dial (**International Dial Recorder**), or the pressure of signal buttons (**Simplex**), the man's number is printed on a strip or sheet opposite the time when the record was made. In case of some of the dial and cylinder recorders the record is made on sheets which when removed can be used to complete the pay-roll figuring without rewriting the time.

Some of the principal manufacturers of time and cost recorders are: International Time Recording Co., Endicott, N. Y.; Simplex Time Recorder Co.,

Gardner, Mass.; Stromberg Electric Co., Chicago, Ill.; W. H. Bundy Co., Syracuse, N. Y.

Most **time recording systems** are so arranged that the time and cost recorders in the factory are electrically synchronized with a master clock located in main office. This is important, as considerable dissatisfaction may be caused to the workmen if they find that the recorder time is not correct. Frequently the master clock is also electrically synchronized with time stamps in the office, program instruments for announcing or signaling time, secondary clocks for observing time, etc.

DATING AND NUMBERING MACHINES.—No office equipment is complete without dating and numbering machines or stamps which might probably be better classified as small tools than machines.

TABULATING AND SORTING MACHINES.—The tabulator, sorter, punches, and cards comprise a system by which a mass of data calling for various classifications can be translated into intelligible reports with accuracy, rapidity, etc., at less expense than is possible by hand. In the use of these machines, the data appearing on orders, bills, time cards, or original entries of any kind are transferred by means of punching machines to cards, one card being used for each item of separate classification. The cards are next machine sorted into the desired classifications and are then passed through the tabulating machine which automatically adds the amounts or value of these classes upon one or more counters.

Great care should be exercised in designing the card. A well-designed card facilitates punching, sorting, and tabulating. The fields should follow, so far as possible, the sequence of the items on the original record. (A field consists of one or more vertical columns of numerals, 0 to 9, arranged according to classifications desired for the particular business under consideration. The heading of the "field" denotes the information which it contains, as year, state, customer, department, value.)

For some purposes, such as labor or material analysis, and wherever the original data can be recorded on the face of the card, the same card can be subsequently punched and used for sorting and tabulating. Such a card is called a **dual card.** Where practical to use the dual card some of its advantages are: immediate reference to original record; a possible increase in accuracy of punching; a saving in purchase of forms replaced.

Apart from speed of sorting and tabulating, punched cards have a distinct advantage in the way of group checking. When sorted and before tabulation, each group can be readily checked by holding the cards to the light and making sure that holes representing the group are identical. In large groups a sorting needle may be substituted for visual checking. This group checking prevents the possibility of a card of a different group being erroneously included.

Some of the principal uses of sorting and tabulating macnines are:

Sales analysis
Order analysis
Purchase analysis
Production analysis
Railroad traffic statistics
Railroad freight statistics—local and interstate
Labor and material analysis
Stock records
Accident statistics
Board of health, vital and other statistics
Postal money-order audit
Insurance written
Insurance cancellations
Insurance losses
Insurance reinsurance
Insurance mortality investigations

Two companies are prepared to supply sorting and tabulating equipment, viz.: the Powers Accounting Machine Corp., 115 Broadway, New York City; the Tabulating Machine Co., 50 Broad St., New York City. Both are operating under the same basic patents.

The principal difference between the equipment furnished is the method of tabulation. In case of the Powers Company sorting and tabulating are mechanical, although it is electric-driven; in case of the Tabulating Company the machine is electric-driven and the tabulating is also accomplished electrically. Both types of equipment use the punched cards as the connecting link between the original entries and the finished records. There are minor differences in speed of punches, sorters, and tabulators which will be brought out in the investigations of intending users. In both cases the main equipment is rented, not sold.

Coding.—Most of the information must be coded before being punched on tabulating cards. The code should be written on the original entry before it is sent to the punch clerk. Composite codes are often easily memorized and translated, as for example, 1001, the first two figures indicating state, and the last two town, etc. It is of great advantage in accelerating the work of coding to have codes in such form as to permit easy and rapid reference. Some form of visible index is probably best for filing codes.

Accessories.—Some accessories necessary or convenient in connection with operation of tabulating equipment are:

Punch verifying machines.

Sorting trays, for keeping separate the accumulations of various groups while operating sorting machine.

Filing cabinets and boxes, for permanent filing of punched cards. In addition to regular tabulations, reports are frequently called for which require special sorting and tabulations, and it is therefore essential that the cards should be so filed as to be readily available. These files vary all the way from special steel or wood files which are furnished by all larger office furniture manufacturers, to original boxes in which cards are received from manufacturers. It is essential that cards be filed in a dry place, tightly packed to prevent warping, and that the receptacles be properly labeled for quick reference.

Key-punch tables—conveniently arranged at the right height for most efficient punching.

TYPEWRITERS—LETTER-WRITING.—The principal makes of letter-writing typewriters are:

Corona (portable)	Royal
Hammond	L. C. Smith
Noiseless	Smith Premier
Remington	Underwood

The **letter-writing typewriters** are so well known and the various features have been so thoroughly advertised that it is unnecessary to occupy space by making comparisons in this manual.

TYPEWRITERS—LETTER-WRITING MULTIPLE.—The **Hoover Automatic Typewriter** seems to be alone in this field. In the operation of the Hoover a stencil is first prepared which resembles the record of a player piano. In reproducing, the superscription is first written by hand operation after which each letter is individually written, the machine being operated by the stencil. A special feature of the machine is that if it is desired to write a name or other special matter in the body of the letter, the machine

can be automatically stopped at the desired point and the insertion typewritten by hand after which the automatic operation will continue. The speed of the machine is about 100 words per minute. For most economical operation where there is enough work to warrant, arrangement should be made for one girl to operate three machines. Each letter being individually typewritten gives the effect of being specially dictated and hand-typewritten.

LEDGER POSTING MACHINES.—In this classification are included those adding machines specially adapted to this class of work, irrespective of the fact that they are not properly termed typewriters. The **principal makers** of bookkeeping, billing, and calculating writing machines are:

The Burroughs Adding Machine Co.
The Dalton Adding Machine Co.
The Elliott Fisher Co.
The Ellis Adding Typewriter Co.
The Remington Typewriter Co.
The Underwood Typewriter Co.
Type-Adder Corporation (adding attachment)

The use of these machines applies principally to the posting and balancing of customers' and vendors' accounts rather than to what are usually termed general ledger accounts.

COMPARISON OF MACHINE METHOD WITH PEN-WRITTEN METHOD.—The following advantages are claimed for these machines:

1. **Legibility.**
2. **Relief from mental strain of operator.** The right keys being used the machine will record, add, subtract correctly. Simultaneously the machine prints a daily proof.
3. **Time saving, posting and billing speeded up, elimination of night work.**
4. **Accounts up to date, including all items.** Invaluable for credit and collection purposes.[1]

BURROUGHS.—There are two types of Burroughs machines which come under this classification.

1. The **Burroughs Moon Hopkins Billing Machine,** which is a combined typewriter and calculating machine performing all of the work necessary in connection with billing, including writing names and addresses, terms, date, order number, and items, and making all extensions and additions necessary to complete the bill. Extensions include handling fractions and adding all items of ½ cent and over, and discarding items under ½ cent. The manufacturers claim superior work for billing, owing to the machine having been especially designed for that purpose and not being merely a typewriter with adding attachments

2. The **Burroughs Bookkeeping Machine,** which is especially designed for ledger posting. It is a full bank adding and subtracting machine and is equipped with date keys, reference numbers, and nine keys describing in abbreviated form the nature of items posted. These keys are specially arranged for the user's business. For all ledger accounts where names, etc., can be written on an addressing machine or typewriter and where detailed itemizing is not required, this machine seems eminently suitable. Special arrangement of keyboard and mechanism is furnished for banks, for cost records, for tax collectors' records, for public service bills, etc.

[1] All machines listed, and probably some that are omitted, have certain points of superiority. It is not the province of this manual to express preferences, but it is recommended that an investigation be made to determine which machine will be best adapted for the particular system desired.

DALTON BOOKKEEPING AND STATEMENT MACHINE.—Is furnished in two types:

1. Extended daily balance system on cross-tabulating machine.
2. Accumulated proof system on shuttle carriage machine.

Some of the **special features** claimed for the Dalton are:

1. Simplicity, as only 10 operating keys make operating by touch method simple.
2. Visible printing.
3. Carriage conveniently located for operation.
4. Paper carriage and normalizing lever. When set to do so, carriage moves automatically from column to column as required for posting.
5. Automatic subtracting lever.
6. Adjustable non-add cam.
7. Normalizing lever changing from statement to normal use.
8. Word printing device.
9. Credit balance key.
10. 10-inch shuttle carriage on shuttle carriage machine.
11. Line finders.
12. Variable line spacer.
13. Special ledger posting stands.

ELLIOTT FISHER CO.—WRITING AND ACCOUNTING MACHINES.—These machines have the following features:

Writing—for cuts, forms, automatic feed machines for continuous length forms, book recording machines for writing in bound books.

Accounting—universal and simplex. **Universal** machines write, add, subtract, and compute vertical totals, and cross balances. **Simplex** machines write, add, subtract, and compute vertical totals.

Special features:

1. The only flat writing surface machine.
2. Writes lines up to 24 inches.
3. Adds and subtracts in any number of columns up to 23.
4. Writes and automatically adds and computes with single key operation.

The **Universal** machine has 3 major features: accounting control; writing several records at one operation; writes.

Control positively checks accuracy of various processes and controls the machine operator's work. Operating errors are corrected in minimum time.

Visual audit sheet is a continuous carbonized record of all entries made in sequence of entry.

Flat surface facilitates making of many records at one operation.

Statement of accounts receivable, in duplicate or triplicate if required, is written simultaneously with posting of ledger and is ready for mailing immediately after last posting.

When used for accounts payable, **voucher** in duplicate or triplicate, and **voucher register** are written at one operation.

Other uses—perpetual inventory, pay-rolls, cost records, etc.

ELLIS ADDING TYPEWRITER CO.—Furnishes adding and subtracting machines with and without the typewriting features for bank and commercial bookkeeping, also **split platen full automatic duplex machine** for statistical and auditing work.

Visibility and **simplicity** are two main features claimed.

REMINGTON.—By use of twin cylinder, Remington statements may be itemized in duplicate, while only daily totals are posted to ledger. This accomplishes the dual purpose of furnishing retail store customers with detailed statement, of which a duplicate is available for office use, while the ledger furnishes the information that is most convenient for the credit department and others who are interested in totals.

For wholesale business both ledger and statement are made at one operation, the balances being shown only at the beginning and end of month.

For billing and posting, daily bill is written and total posted to ledger at one operation. Bill is automatically added and grand total for the day secured, proving both billing and posting.

Accounts payable ledger and departmental distribution are posted at one operation. For department stores the purchase record shows purchases at both cost and retail, also claims and returns, transportation and percentage of mark-up by departments.

Remittance voucher and ledger posting are made at one operation; voucher is added and extended and ledger balanced.

Pay-rolls and pay checks are written at one operation, the pay-roll remaining in machine while checks are inserted, written, and removed. Deductions are made from earnings and the net amount extended; separate totals of each column automatically added.

Bills as made can be copied on register sheet and distribution by departments, etc., furnished. Machine furnishes total for each classification and grand total for day.

Distribution capacity—this is controlled by the size of carriage, maximum length 32 inches, providing from 30 to 40 columns. Automatic column selector permits of direct posting to column desired. Cross total furnished, as well as column totals.

Simplicity and ease of operation is claimed to accomplish maximum amount of work with minimum fatigue.

Other features are correction key, automatic visible audit sheet, and automatic proof of work.

UNDERWOOD BILLING MACHINE AND BOOKKEEPING MACHINE.—

Billing Machine.—Two methods are commonly used:

1. **Unit billing**—whereby any number of copies are made at one writing.
2. **Condensed billing**—carbon copies of bills appear on sales sheet in condensed chronological form, the sales sheet being adjusted to the writing on bills by use of ratchet.

Bookkeeping Machine.—Work of posting is proved against pre-figured control by adding register. New balances, machine computed, are made at each posting. Posting to control sheet of previous trial balance, plus debits, minus credits, equals new trial balance, machine computed.

Machine is mechanically locked in case of mistabulation.

Elimination keys permit of correcting errors before operating adding mechanism.

Aligning plate permits of easy alignment of forms to writing position.

Procedure in Large Dry Goods House.—Charge sales tickets sorted by auditing department as collected, according to ledger subdivisions. They are posted in totals the morning following verifications by control bookkeeper. Machine makes tally strip which is handed to control bookkeeper with tickets

when posted. Tickets are next handed to billing clerk in same units and posted in detail on bills. When billing is completed tickets are returned to control bookkeeper with billing tally slip, which should show the same total as posting tally slip. Comparison assures location of errors. Standards set are 1,000 ledger postings per day and 500 tickets billed per day. Experienced operators easily attain these standards and many exceed them.

THE TYPE-ADDER CORPORATION.—Furnishes an attachment which it claims, when attached to any standard keyboard typewriter, makes that typewriter two separate and distinct machines, viz.: (1) a bookkeeping, billing, adding machine; (2) the same typewriter as before.

Special features claimed are:

1. Flexibility.
2. Weight—only a trifle more than a pound.
3. Independence of the typewriter.
4. Mechanical simplicity.
5. Low retail selling price.

ACCESSORIES.—To satisfactorily operate billing and bookkeeping machines, specially ruled sheets as well as binders, tables, and other accessories are necessary. Many concerns are furnishing these, some of whom are:

Baker-Vawter Co.	Library Bureau
Globe-Wernicke Co.	Tatum Company
Irving Pitt Manufacturing Co.	Yawman & Erbe Manufacturing Co.

PROTECTIVE AND PERFORATING MACHINES.—Protective machines are principally used for protecting checks against raising the amount or changing the payer's name. One manufacturer advertises the adoption of a check writing machine by the United States government to prevent forging of liquor permits. Broad claims for safety to depositors and banks are made by the manufacturers of check writing and protecting machines. Some manufacturers support their claims for superiority by furnishing an **indemnity insurance policy** with each machine sold. As the security of the bank account is of vital interest to all, careful investigation should be made before investing. Some of the principal manufacturers are:

Defraine Check Writer Corp., Rochester, N. Y.
Hedman Manufacturing Co., Chicago.
Safe Guard Check Writer Co., New York City
Todd Protectograph Co., New York City
Weig Sales Corporation (F. & E. check writer), New York City

In addition to the protective feature, claims of superiority are made by some manufacturers in the way of time saving in writing checks for payrolls, dividends, and commercial uses, also for electric and gas bill writing. One feature of protection not usually considered is the protection from payroll hold-ups when paying by check. Another feature emphasized is the protection of the payee's name as well as the amount.

PERFORATING MACHINES.—We are indebted to Cummins Perforator Co., of Chicago, for information regarding perforators. Perforating machines, which originally meant check protectors, now suggest multiple marking machines which at each stroke mark 10 or 15 sheets of paper with perforations in the shape of letters or figures.

They are used for dating, numbering and otherwise, marking orders, etc., when multiple copies are made. They are also used in connection with vouchering as a safeguard against duplicate payment of bills. Perforation of postage stamps to discourage pilfering has been adopted in England for

many years, and more recently in the United States. Perforators are largely used by banks and trust companies for cancellation of checks, stock certificates, bonds, etc.

ADDRESSING AND MAILING APPARATUS.—There are **two principal types** of addressing machines, one using metal plates on which the facts to be printed are embossed, and the other using stencils cut in oiled paper. The first type is represented by the Addressograph Co., and the second by the Elliott and the Belknap.

While, as their name implies, addressing machines were originally designed for handling mailing lists, addressing envelopes, cards, etc., their development in the last 25 years has been so rapid that they are now used for many other purposes.

ADDRESSOGRAPH.—The plates are embossed on blanks supplied by the manufacturer by means of a graphotype, after which they are inserted in frames which also hold prints of the embossed plates. The frames are arranged in card index sequence according to the desired classification. Frames are equipped with tabs, plain or colored, either alphabetical, numerical, geographical, etc., and with a selector which permits of printing or skipping plates as desired without disturbing the original order. There are several types of the addressograph printing machine, from the hand-operated envelope or card addressing machine to motor-driven machines which handle the more complicated work, such as:

Filling in form letters for direct-by-mail advertising.
Maintaining fixed mailing schedules for house-organs.
Maintaining fixed mailing schedules for dealers and salesmen.
Printing and distributing shop orders.
Printing names and data concerning parts on inventory sheets.
Other cost-keeping records.
Printing shipping tags, labels, and waybills.
Scheduling shipments.
Filling in insurance notices and receipts.
Heading up and dating customers' statements.
Listing and heading up ledger accounts.
Listing vouchers and filling in checks.
Printing numbers, names, and occupations on time clock cards.
Listing employees on pay-roll sheets.
Printing pay envelopes.
Listing and filling in names and dates on dividend checks.
Printing routes, including customers' names and addresses, for bakeries, laundries, dairies, creameries, cleaners and dyers, newspapers, magazines, factories.

Some of the **special features** claimed for the addressograph are:

1. Comparatively low cost of maintenance and installation.
2. Most flexible and adaptable addressing method.
3. Prints through a ribbon, thereby matching with typewritten forms, etc.
4. Reduces work of keeping lists up to date and accurate to a minimum. It is claimed that this represents 90% of the expense of maintaining a mailing list.
5. Permanent, owing to plates, withstanding fires, floods and earthquakes.

ELLIOTT.—The stencils for use on the Elliott addressing machine may be written on any standard typewriter, the ribbon being removed and the type cutting a stencil instead of printing. For addressing that does not require typewriter type, the stencils furnished are on the Gothic type address card. The company will furnish these stencils ready-cut, or they can be cut by users on stencil cutters which the company furnishes, operating either by hand, foot, or electric power.

Uses of the Elliott machines, as specified by the manufacturer, cover:

Distribution of price lists.	Preparation of shipping tags.
Distribution of bulletins.	Preparation of labels.
Distribution of house-organs.	Preparation of bills of lading.
Distribution of financial statements.	Preparation of packing lists.
Distribution of dividends.	Preparation of pay-rolls.
Distribution of stockholders' notices.	Preparation of pay envelopes.
Distribution of market reports.	Preparation of time cards.
Distribution of advertising matter.	Preparation of work tickets.

Special attachments are furnished as follows:

Sheet listing attachment for pay-rolls and other lists.

Multiplicator for printing names and addresses two or three times on different forms.

Repeating and skipping attachment, which repeats as often as required, or skips cards not wanted.

Dick mailer strip lister for printing on continuous poster roll for use of publishers.

Automatic selector, which selects only those stencils required.

Line cover attachment, which enables any line on stencil to be temporarily eliminated when not required.

Numbering and dating attachment, which consecutively numbers and dates slips, etc., at the same time as they are addressed.

BELKNAP MACHINE.—The claims made for the Belknap machine are so similar to those made for the Elliott that the intending purchaser should make a personal examination of both machines before deciding. Claims are made on behalf of all three of the machines mentioned that they will handle practically the same work; the choice lies first between the metal plates and the stencils, and finally as to price, speed, durability, storage space, quality of work, elasticity, speed, etc.

OTHER MAILING APPARATUS.—

- Envelope sealers
- Envelope sealers with United States government permit printer, with or without meters.
- Postage stamp affixers and recorders.
- Automatic parcel post computing machines
- Speed-o-feeders, facilitating rapid addressing of envelopes and statements by typewriter.

Envelope Sealers.—Are of several different models, from the hand-operated machine sealing 100 to 150 envelopes per minute, to the motor-driven postage meter which seals, stamps, cancels, and postmarks 250 envelopes per minute, at the same time counting on a meter attachment, which count is accepted by the Post-Office Department for the prepayment of postage. The stamping on this type of machine refers to permit printing. Some of the companies handling this class of apparatus are:

The Multipost Co., Rochester, N. Y., hand envelope sealers, permit printing envelope sealers, with and without meter attachment.

International Postal Supply Co. The Hey-Dolphin postal permit machine, which feeds, counts, and stacks automatically any standard envelope. Two models: M imprints 400 pieces per minute; F imprints 800 pieces per minute. Both are electrically operated. Model M is convertible to hand-power.

Postage Meter Co., Stamford, Conn. The Pitney-Bowes postage meter, "A printing and recording mechanism which is licensed for use under special rules and regulations issued by the Post-Office Department for printing postage directly on mail matter." The mechanism is a combination of a mailing machine (with sealing attachment) and a meter which is detachable, enabling it to be taken to the post-office for resetting. It is claimed that, due to the operation of the meter, assuring the authorities that postage has been prepaid, considerable time is saved and delays avoided, as mail so stamped goes directly to the distributing cases on reaching the post-office.

Standard Envelope Sealer Manufacturing Co., Everett, Mass. Standard envelope sealers, 4 models, from hand-operated machine, sealing 100–150 letters per minute, to electrically operated machines handling from 150,000 to 200,000 letters per day; also Standard permit printer and sealer electrically operated, handling 12,000 envelopes per hour.

Postage Stamp Affixers and Recorders.—Made by the Multipost Co., Rochester, N. Y. These work like self-inking rubber stamps. Stamps are placed in containers in rolls, and the Multipost dampens the stamp and affixes it in one operation. Extra containers for different denominations of stamps can be procured to work interchangeably in the Multipost. **Several models** are offered, some equipped with counters to keep track of stamps used and also locked to prevent use by unauthorized persons; also **parcel-post machine,** including eight sections for different denominations of stamps.

The Standard Stamp Affixer Co., New York City, furnishes the Standard affixer with or without register. In general appearance and method of operation the Standard is very similar to the Multipost.

Parcel-Post Computing Machines.—The Postometer Co., Poughkeepsie, N. Y., furnishes an **automatic parcel-post computing machine** which indicates the exact amount of postage required on pressure of the zone key.

Computing scales with charts for figuring parcel postage are furnished by the Dayton Scale Co., Dayton, Ohio, and the Toledo Scale Co., Toledo, Ohio.

Speed-o-Feeder.—Furnished by American Speed-o-Feeder Co., Cleveland, Ohio. This is a typewriter attachment facilitating rapid addressing of envelopes or statements on any standard typewriter. It is claimed that with this attachment typists can address twice as many envelopes as without it.

MISCELLANEOUS.—Under this heading are included:

1. Automatic paper fasteners
2. Cabinets
3. Card indexes
4. Desk organizers
5. Display fixtures
6. Duplicating machines
7. Indorsing machines
8. Finding and filing machine
9. Flexi file
10. Line-a-Time copy-holder
11. Photostats
12. Signagraph
13. Steel grips
14. Telautograph
15. Ticketograph
16. Visible records

AUTOMATIC PAPER FASTENERS.—The Hotchkiss Sales Co., Norwalk, Conn., has been furnishing automatic paper fasteners for over 30 years. The fasteners consist of strips of staples which are fed into the machines. The machine is operated by a blow on the plunger which drives the staples one at a time, through the papers which it is desired to attach, and clinches them on the back. This form of machine, with steel staples, has also been adapted as a tacking machine for use in shipping departments, etc.

The **Spool-o-Wire Stapling Machine,** furnished by the Hutchison Office Specialties Co., New York, and manufactured by the Remington Typewriter Co., is equipped with a spool of special grade stitching wire of more than 1,250 feet in length, furnishing over 15,000 staples before the spool is exhausted. It is claimed that up to 40 sheets can be bound together without any adjustment of the machine.

CABINETS.—Cabinets specially designed for office use, for correspondence, card indexes, documents, ledger cards, etc., made in either wood or steel, are furnished by the Library Bureau, Globe Wernicke Co., Shaw-Walker Co., and many others.

CARD INDEXES.—Some of the principal manufacturers of card index equipment are Amberg File & Index Co., Globe Wernicke Co., Library Bureau, Shaw-Walker Co.

DESK ORGANIZERS.—Called also **work organizers,** are "multiple folders" which lie flat on the desk or in desk drawers. Each fold is a subject-labeled pocket to receive and classify desk work. Work organizers are furnished with capacities of from 6 to 15 pockets, either front or side opening, and in paper, fabrikoid, or leather. The same manufacturers also furnish a **sorter,** built on the same principle but with 43 pockets; also a **desk tray** for the middle shallow drawer with 9 compartments for clips, pins, rubber bands, pencils, etc. These organizers are furnished by Work Organizer Specialties Co., Detroit, Mich.

DISPLAY FIXTURES.—These fixtures are constructed like a large loose-leaf book. The leaves are made in all sizes, from 8½ inches wide × 11 = 96 inches wide × 108 inches high. The leaves have fillers of thumb-tack board, solid wood, or wood stretcher covered with burlap, and also furnished so that samples may be displayed under glass. Many different models of holders are furnished, either fastening on the wall or standing independently on the floor. They are largely used for the display of maps, charts, graphs, advertising matter, printed forms, for visualizing flat material, and for display of samples. Such fixtures are furnished by the Multiplex Display Fixture Co., St. Louis, and the Universal Fixture Corp., New York City.

DUPLICATING MACHINES.—There are three main types of duplicating machines:

- Those printing from stencils.
- Those printing from type.
- Those printing from originals written in special ink by hand or with special ribbons by typewriter and reproduced on a bed of gelatinous material, from which exact copies are made.

The principal manufacturer of the stencil type of reproducer is the A. B. Dick Co., Chicago, manufacturer of the **Mimeograph.**

The **Multigraph,** manufactured by the American Multigraph Co., Cleveland, is probably the best-known reproducing machine of the typesetting variety.

The **gelatine bath,** or **roll type,** is represented by the **Ditto,** manufactured by Ditto Incorporated, Chicago, and the **Speedograph,** manufactured by the Beck Duplicator Co., New York City.

The list of manufacturers, while representative, is not to be supposed as complete.

INDORSING MACHINES.—Where large numbers of checks are handled, especially in the larger banks, the **International Check Indorsing Machine** can be used to advantage. It is claimed that this is the only automatic quantity feed indorser on the market and that it will indorse as many checks as could be indorsed in the same time by hand by a dozen clerks. This machine is motor driven and it is claimed can be operated by anyone without previous experience. It is manufactured by the International Postal Supply Co., New York City.

MECHANICAL FINDING AND FILING MACHINE.—This is a new machine recently put on the market by the Add-Index Corp., New York City, whereby specially designed card indexes for ledgers or similar records are supplemented by a finding device which instantaneously locates the required card for posting or reference. The cards are filed numerically and so constructed that operation of keys on the finder raises the card desired. It is claimed that even a misplaced card can be located in a very short time by the aid of the finder. This machine seems to be particularly adaptable to savings banks. Users of it are enthusiastic and claim a large percentage of saving in personnel since the installation of the machine. These machines are hand-operated.

FLEXI FILE.—The Flexi File is a mechanical device eliminating the follower block and holding the papers in a file drawer always in a vertical position. The equipment consists of a wire frame parallel with and above the drawer side. Metal riders running on these wires support cloth hammocks which divide the drawer into a series of flexible pockets. The Flexi File increases filing capacity and speed in finding and filing papers; it instantly makes available the unused space at the point needed. This device is furnished by the Library Bureau.

LINE-A-TIME COPY-HOLDER.—The Line-a-Time is a copy-holder which greatly facilitates the work of typists in copying manuscripts, statements, etc. It stands on the desk at the most convenient point for the operator. This device is considered a necessity by most operators when copying tabulated statements. The Line-a-Time is manufactured by the Line-a-Time Manufacturing Co., Rochester, N. Y.

PHOTOSTAT.—The Photostat is a photographic copying machine, including developing and fixing apparatus. Its operation is so simplified that it can be efficiently operated by office boy or girl. The great advantage of the photostat is the ability to reproduce in very short time and inexpensively, exact copies of any document, drawing, plan, diagram, etc. Such copies would be accepted as legal evidence in court. The first print from the original is a negative, the colors being reversed. A positive or exact duplicate print of the original is simply made by rephotographing the negative. The photostat is manufactured by the Photostat Corporation of Rochester, N. Y.

SIGNAGRAPH.—The Signagraph is an instrument by which from 5 to 20 original signatures may be affixed simultaneously by one writing to checks, stock certificates, bonds, or other documents. There are **three**

models, the **Junior Signagraph,** the **Cheque Signagraph,** and the **Stock and Bond Signagraph.**

The **Junior Signagraph** is a portable instrument in mahogany case, 20½ × 5½ × 11 inches. This model signs simultaneously and continuously 5 checks in sheet form. It is adjustable to any size of check, not exceeding 3¾ inches in width. Two thousand signatures per hour is a fair performance.

The **Cheque Signagraph** consists of a table bed with folding extension leaf; across both at front and back run endless chains actuated by sprockets and a crank handle. On rotating the handle two sheets of checks are carried under the writing frame upon which are two parallel rows of fountain pens, spaced to cover the signature space of the checks beneath. The pens are under the control of a **monitor penholder,** or handle which when handled as a pen causes all the pens to respond simultaneously. After signing 10 checks the writer turns the crank handle, thereby transferring the signed checks to a receiving tray and simultaneously placing on the writing bed a new set of 10 checks for signature. The instrument is adjustable for any size of check sheet not exceeding 18¾ × 9½ inches. Average signatures on this model are about 5,000 per hour. The instrument is adjustable for either right- or left-hand signatures.

The **Stock and Bond Signagraph** is an instrument by which from 14 to 20 signatures may be affixed simultaneously to stock certificates, bonds, and other similar documents. Documents requiring two signatures may be signed consecutively by two officials working at the same time. The documents are so arranged that the officials do nothing but sign, as the securities are kept in their numerical order and are ready for delivery immediately after the final signature is affixed. The **speed of signing** varies with the capability of writers from 6,000 to 10,000 per hour.

The Junior Signagraph is **sold.** The Cheque Signagraph is **rented.** The Stock and Bond Signagraph is located in the office of the manufacturer and the charge is a **unit price per signature per document.**

The Signagraph is furnished by The Signature Co., 15 Broad St., New York City.

STEEL GRIP MASTER CLIP.—This is a spring steel clip 5½ × 11/16 inches, with a bull dog grip. This clip is especially valuable for such purposes as holding down check stubs when working on a bound check book, separating papers in a brief case, holding correspondence awaiting signature, etc. It acts as a good substitute for paper weights. The Steel Grip is furnished by Lester Collier, Times Square, New York.

TELAUTOGRAPH.—This transmits handwriting instantaneously by wire from sending to receiving station, whether in next room, an adjoining city, or a neighboring state. This instrument is familiar to people who are waiting for incoming trains, as it is largely used by railroads for information service. The transmitting station instruments both send and receive messages. The receiving station instruments only receive. Where necessary, due to connection with distant station or stations, selecting switch keys are installed enabling sender to select the desired receiving station.

Telautograph equipment is used largely by banks, stock-brokers, department stores, hotels, hospitals, railroads, and by many manufacturing, mercantile, and service companies.

TICKETOGRAPH.—Where coupons are used in connection with manufacturing, cost, and production records, the Ticketograph can be used to good advantage. This instrument prints at one operation on from 1 to

82 coupons on a coupon ticket form such information as price, code, lot number, style number, quantity, etc. Manufactured by The Tabulating Machine Co., 50 Broad St., New York City.

VISIBLE CARD INDEXES.—For many purposes the visible index is a considerable improvement over the usual form of card index and loose-leaf record, and while occupying considerably more space per thousand cards and also costing more, the advantage of immediate availability is a consideration not to be lost sight of.

Some of the uses for which visible records seem particularly adapted are:

Advertising records	Quotation records
Collection follow-ups	Customers' lists
Credit records	Mailing lists
Employment records	Membership lists
Personnel records	Production records
Order register	Signature records
Stock records	Real estate records
Purchase records	

There are many manufacturers of visible indexes and equipment, some of the principal being:

Acme Card System Co., Chicago and New York City
Accounting Devices Co., Chicago and New York City
American Kardex Co., Tonawanda, N. Y.
Index Visible, Inc., New York City
Library Bureau, New York City
Rand Co., New York City
Visible Records Equipment Co., Chicago and New York City

The Accounting Devices Co. and the Visible Records Equipment Co. are offering visible records in prong binders, which seem to meet the need of those companies which have decided that visible records with the special cabinets or fixtures usually specified are either too expensive or occupy too much space.

SECTION 27

MANAGEMENT

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 27

MANAGEMENT

DEFINITION.—Management, as used in industry, has two meanings. It is applied broadly to the group which exercises control in a given plant, and when so used includes owners, managers, and executives. It is also applied more specifically to the economic functions of control, or to the activities and work done by the control group. A definition of management as an **economic function** was adopted by the Management Division of the American Society of Mechanical Engineers in 1921: "Management is the art and science of organizing, preparing and directing human effort applied to control the forces and to utilize the materials of nature for the benefit of man." In this definition are three significant words: organizing, preparing, and directing. These indicate the three main subfunctions of management.

Organizing comprehends setting up of a manufacturing concern, choosing site for plant, selecting equipment, planning layout, arranging major departments, securing and allotting operating capital, determining size and make-up of executive staff—or, broadly, setting up the business enterprise. Similarly, problems of sales, personnel, and all other major activities must be subjected to organizing processes before an enterprise is ready to operate. Thus the act of organizing delineates the form which the undertaking shall assume.

Preparing comprehends those activities which must be brought into harmony that a business may function as a unit. When put into effect it works out a procedure for relationships between activities and personnel, sets up labor, purchase, receiving, and storage records, and those records which control production and determine cost.

Directing is the administrative function of management. It comprehends the execution or carrying out of the objects for which the enterprise is organized and for which its various activities are co-ordinated. It initiates work in the factory, makes sure that the personnel is properly trained and cared for, that current day-to-day matters of all kinds are met; in short, that men, materials, and equipment are brought together so that production may be initiated and maintained.

DEVELOPMENT OF MANAGEMENT.—Need for management has grown out of the development of modern industry. Invention and application of labor-saving machinery brought mass production which required mass financing and, finally, mass management. As a science management is little more than a generation old. Disclosures which brought it to the attention of industrial executives were a series of papers presented to the American Society of Mechanical Engineers between 1891 and 1908. These include the classic papers of Frederick W. Taylor, F. A. Halsey, Henry

L. Gantt, and others dealing with shop management and wage-payment plans.

In 1912 a special committee of the American Society of Mechanical Engineers prepared a paper on "Status of Industrial Management," in which **three regulative principles** were quoted from Church and Alford, and indorsed as follows:

1. Systematic use of experience.
2. Economic control of effort.
3. Promotion of personal effectiveness.

In 1922 another paper entitled "Ten Years' Progress in Management" was presented to the Mechanical Engineers, reviewing the developments of the period 1912–1922. Weight of fact and opinion in that report indicated that certain mechanisms of management had made decided headway during the period and were widely accepted both in principle and practice. Arranged according to the importance of application they yield two groups:

1. Balance of stores
   Incentive wage plan
   Purchase control
   Selection and placement of personnel
2. Cost control
   Idle time analysis
   Planning
   Time study

Table 1. Use of Management Mechanism in 51 Plants of Four Industries

Mechanism of Management	Boot & Shoe, 8 plants			Men's R. M. Clothing, 9 plants			Printing, 6 plants			Metal Trades, 28 plants*			Totals, 51 plants		
	None	Inadequate	Good	None	Inadequate	Good	None	Inadequate	Good	None	Inadequate	Good	None	Inadequate	Good
1. Selection and placement	0	6	2	0	4	5	0	5	1	10_0	6_4	10_8	0	25	26
2. Incentive wage plan	0	0	8	4	2	3	1	1	4	2_1	6_3	8_8	8	12	31
3. Planning centralized	4	0	4	4	2	3	3	2	1	3_1	8_2	5_9	15	14	22
4. (a) Routing, order of work	4	1	3	4	2	3	5	0	1	5_2	6_2	5_8	.20	11	20
5. (b) Scheduling, machine assignments	3	3	2	3	2	4	3	2	1	4_1	5_3	7_8	14	15	22
4. Time study	5	2	1	3	3	3	5	0	1	6_2	2_1	8_9	21	8	22
5. Cost control	1	3	4	2	5	2	3	2	1	4_2	3_6	9_4	12	19	20
6. Idle-time analysis:															
(a) Men	7	1	0	6	3	0	5	0	1	13_8	0_0	3_4	39	4	8
(b) Machines	7	1	0	8	1	0	3	0	3	9_6	1_0	6_6	33	3	15
7. Purchase control	1	4	3	3	1	5	3	2	1	3_1	4_1	9_{10}	11	12	28
8. Balance of stores	1	1	6	3	1	5	4	1	1	2_1	4_1	10_{10}	11	8	32

* The two figures shown separately in the metal-trades columns represent totals for the 16 plants (upper figure) covered by the regular questionnaire, and the 12 plants (lower figure) which filled out only a condensed questionnaire.

Summary figures for 51 plants in 4 industries developed from information secured in connection with the "Wastes in Industry" investigation are presented in the preceding table. They show the frequency of cost control compared with other management methods and routines. **Management and cost accounting** records touch at many points, particularly in developing control of a business or industrial enterprise.

Types of Organization

SCIENCE AND ART IN ORGANIZATION.—Two points of view may be taken in connection with any given organization of a business or industrial concern: (1) impersonal or solely as to scope, limits, and relations of functions; (2) personal as to entrusting different kinds of **mental and manual** activity to the right persons and supervising their co-ordination. The first has a scientific basis; the second is an art. Only the first has a bearing on accounting practice.

Various arrangements and interrelations of functions involved have led to recognized types of organization. These may be found in any of the principal activities, as, purchasing, sales, engineering, production, or others. Which type is selected under a given set of conditions depends largely upon the size and degree of complexity of the work to be performed.

TYPES OF ORGANIZATION.—Three common types are:

1. Military or line organization
2. Functional organization
3. Line and staff organization

To these a fourth is sometimes added:

4. Committee organization

Military or Line Organization.—The oldest and most natural form. It is based on essential need of **discipline** where work of large numbers of persons must be directed toward a common objective. Its prototype is the military organization of the past.

Lines of authority and instruction are all vertical from superior to subordinate, extending from general manager to workmen as shown in Form 1, which is for a manufacturing organization. Duties and responsibilities may be deputized from general manager to superintendent, and from superintendent to foremen. No foreman exercises authority over, or gives instruction to, any other foreman; no workman owes duty to, or is held responsible by, any foreman except the one immediately over him. Subdivisions of functions are such that the mental and manual labor required of men on the same organizational level is approximately the same. Mental work of administration is reserved to those in higher authority; simple duties are delegated to those under them.

Advantages of this type of organization are: simplicity; clear definition of duties and responsibilities; and ease of securing discipline.

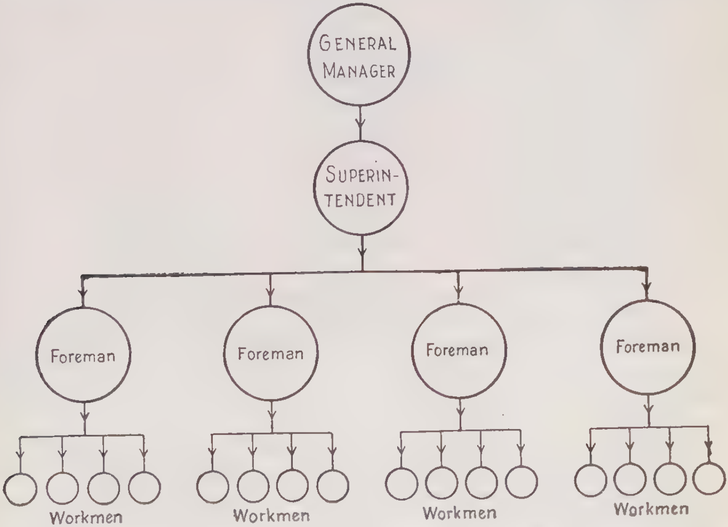
Disadvantages are: difficulty of operation in large or complex undertakings; overloading a few men with duties and responsibilities; tendency to perpetuate inefficient methods; undue reliance upon skill and personal knowledge of workmen; and danger of disaster if a strong executive is lost.

A **pure example** of the military or line is seldom found, and it is restricted to small establishments or where the work done consists of very simple operations or processes.

Functional Organization.—This form has been developed to make the

greatest use of expert knowledge and advice. Mental and manual work is subdivided and deputized as shown in Form 2, which is for a producing organization needing both chemical and engineering counsel. Therefore a chemist gives advice to all the foremen on chemical matters, an engineer on engineering matters, and the superintendent in regard to actual production.

Lines of authority and instruction pass from each adviser to every functional foreman, and from each functional foreman to every workman. Duties of the foremen may be quite different, for each may have charge of but a certain aspect of the work. Different instructions will be received by the workmen from each foreman.



FORM 1. Authority and Responsibility Relationships under Military or Line Organization

(From article by Dexter S. Kimball, *Management and Administration*, December, 1923)

Advantages of this type of organization are: separation of mental and manual labor according to functions to be performed; maximum of expert advice and direction; minimum of functions assigned to any one person; tendency toward high individual efficiency. **Disadvantages** are: weak discipline; difficulty of co-ordinating many separated functions; tendency to produce narrow specialists among the executives and automatons among the workers.

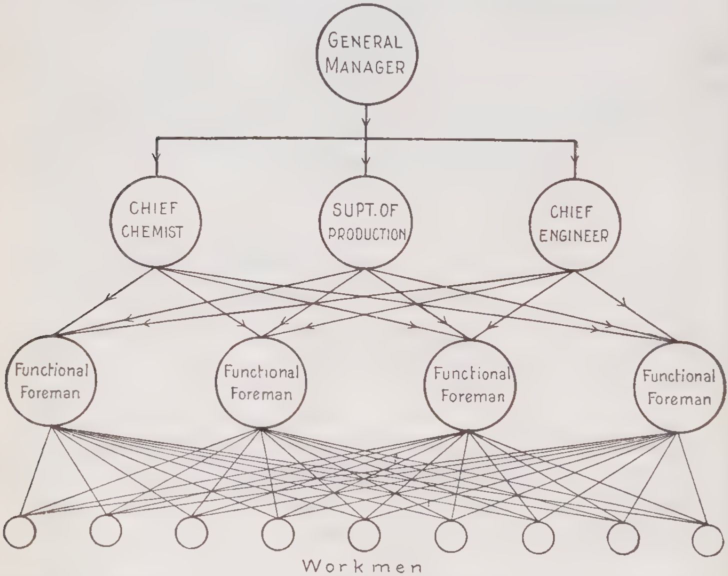
A **pure example** of the functional organization is hard to find.

Line and Staff Organization.—This combines features of both the military and functional types. Form 3 shows the general plan which is used in most industrial plants of any size. The primary functional divisions are into sales, engineering, manufacturing, and finance. The heads of these four

divisions are equal in authority. Each has certain line duties and responsibilities. On the other hand, each has certain advisory or staff functions. For illustration, the treasurer and chief engineer give advice and instructions to the factory superintendent. Under the superintendent are functionalized several departments, while the tool designer, order clerk, and chief inspector give advice to the shop foremen.

Lines of authority and responsibility are vertical for the line executives having the least complex duties, and spread from staff advisor to line executive wherever expert knowledge and counsel are needed.

In general the **advantages** of this type of organization are the sum of those noted for the two preceding types, while the **disadvantages** of these types are minimized.



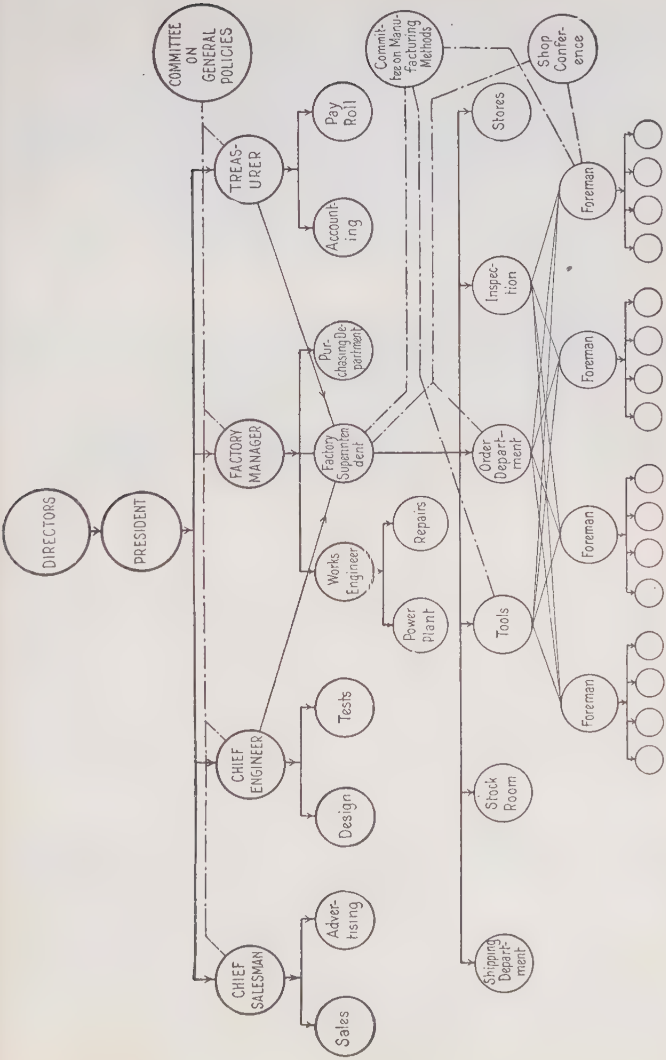
FORM 2. Authority and Responsibility Relationships under Functional Organization

(From article by Dexter S. Kimball, *Management and Administration*, December, 1923)

Committee Organization.—This is a modification of the line and staff type where the advisory functions are exercised by committees. Sometimes such committees are combined with individual staff advisors as shown in Form 3.

Material Control

PURPOSE OF MATERIAL CONTROL.—Importance of **material control** in an industrial plant cannot be overemphasized. Upon it depends



FORM 3. Authority and Responsibility Relationships under Line and Staff Organization
(From article by Dexter S. Kimball, *Management and Administration*, December, 1923)

production and orderly handling of the entire factory operation. Main purposes of such control are:

1. To keep right quantity and quality of materials on hand at all times.
2. To care for and conserve all materials awaiting use.
3. To determine requirements for materials by correlating production and sales programs.
4. To secure cost figures on all materials and supplies used in production and factory operation.
5. To furnish at any and all times records as to quantities of materials on hand, on order, assigned, utilized, needed, and so on.
6. To determine value of the material inventories.

To satisfy these controls, four general **groups of records** are needed:

1. Receiving records
2. Stores records
3. Work in process records
4. Inspection (or quality control) records

RECEIVING RECORDS.—Serve two main purposes: To see that goods ordered are received in time or followed up; to be sure that goods are

SHIPMENTS RECEIVED VIA BETWEEN M & M DATE ____________

CONSIGNOR	ADDRESS	NO OF PACKAGES	CONTENTS OF SHIPMENT	APPLYING ON PURCHASE ORDER NO.	MATERIAL RECEIVED REPORT NO.

FORM 4. Form for Record of Purchase Material Received (in duplicate)
(From Madison Cartmell's "Stores and Materials Control")

received so that invoices can be paid. Nature of receiving records depends somewhat upon size of plant and length of time required to complete the receiving routine. Receiving departments of large plants list all parcels or goods as received, making use of a duplicate form such as Form 4. This form serves as a means of notification to purchasing department of what is received and for inspection of material. It shows carrier, consignor, with the address of each, number of pieces in each shipment, number of purchase orders against which the shipment applies, and contents of the parcel, if such is known. Copy 1 is forwarded to purchasing department follow-up clerk. Copy 2 is held pending the inspector's report as to quality and quantity. **In small plants** where receiving routine is simple and volume of materials handled small, a record of this kind is not required.

A more **elaborate form** for reporting received material is shown in Forms 5a, 5b. On these forms spaces are provided for vendor's name, order number,

PURCHASED MATERIALS RECEIVED REPORT							ORDER NO.	COPY 1	
RECEIVED FROM							DATE RECEIVED		DATE WRITTEN
VIA		CAR INITIALS AND NUMBER			NO. OF PACKAGES		GROSS WEIGHT		INVOICE NO.
MATERIAL SYMBOL AND LOCATION	QUANTITY			NET PURCHASE CHARGE	TRANSPORT. CHARGE	TOTAL COST	UNIT COST		
	RECEIVED	REJECTED	ACCEPTED						
SYMBOL									
LOCATION	DESCRIPTION								
SYMBOL									
LOCATION	DESCRIPTION								
SYMBOL									
LOCATION	DESCRIPTION								
SYMBOL									
LOCATION	DESCRIPTION								
SIGNED INSPECTION DEPT.	INVOICE CHECKED	TRANSPORTATION INVOICE CHECKED	CHARGES ENTERED AND COSTS FIGURED	ENTERED ON STORES CONTROL					

FORM 5a. Purchased Materials Received Report (copy 1)
(From Madison Cartmell's "Stores and Materials Control")

PURCHASED MATERIALS RECEIVED REPORT					ORDER NO.	COPY 2
RECEIVED FROM					DATE RECEIVED	DATE WRITTEN
LOCATION	DESCRIPTION					
THE ABOVE MATERIAL IS IN THE STOREROOM READY FOR USE. STORAGE DEPT.	TAG MADE OUT BY	VALUE ENTERED BY	VALUE EXTENDED BY	ADDED TO STOCK RECORD	STORES CHARGED	ORDER CREDITED

PURCHASED MATERIALS RECEIVED REPORT		ORDER NO.	COPY 3
RECEIVED FROM		DATE RECEIVED	DATE WRITTEN
LOCATION	DESCRIPTION		
SYMBOL			
LOCATION	DESCRIPTION		
RECEIVED THE ABOVE ACCEPTED MATERIAL FROM THE RECEIVING DEPARTMENT RECEIVING DIVISION, STORAGE DEPT.			

FORM 5b. Purchased Materials Received Report (copies 2, 3)

quantity received, and quantity rejected, if any. Copies are signed by the inspection clerk and distributed, one to purchasing department for checking quantities of invoices, another to stores records after material has been sent to storekeeper, while third copy is signed by stores clerk and finally by receiving clerk for his own protection. Inspection of quality of purchased goods is technical, and if a lot has been found unsatisfactory and is rejected, its amount is noted not only on materials received report (Form 2), but also on a rejection report (Form 6). General information on rejection report is similar to that on materials received report, except that former describes tests made and why material failed to satisfy specifications and

DEFECTIVE MATERIAL REJECTION REPORT

TO PURCHASING DEPARTMENT DATE ______

THE MATERIAL NOTED ON THE FACE OF THIS REPORT HAS FAILED TO PASS INSPECTION FOR THE FOLLOWING REASONS: ______

WE RECOMMEND ______

PLEASE ADVISE AS TO WHAT DISPOSITION SHOULD BE MADE OF THIS MATERIAL

______ RECEIVING DEPARTMENT

CONDITION OF STOCK:
ON HAND ______
ON ORDER ______
______ STORES RECORD CLERK

INSTRUCTIONS FOR DISPOSITION OF ABOVE MATERIAL:

______ PURCHASING DEPARTMENT

Form 6. Back of Defective Material Rejection Report Form
Face is used as copy 4 of Form 5
(From Madison Cartmell's "Stores and Materials Control")

to meet requirements. Information on Form 3 enables purchasing department to prepare its claim against vendor.

STORES RECORDS.—Prime functions of a storekeeping system as laid down by Gantt are:

1. To have on hand, when wanted, all material needed.
2. To see that all material not needed is disposed of.
3. To safeguard all material not issued to some special order.
4. To keep in the manufacturing office an exact balance of material on hand and on order.

Stores records have been developed in great variety to meet many different conditions. In general, such a record should comprise:

1. Description of material.
2. Factory requirements for each kind of material.
3. Quantities on hand, on order, and allotted or assigned to production.

4. Quantity to be ordered when time comes to procure more, either by purchase or manufacture.
5. Unit price at which particular item is to be priced on requisitions.
6. Quantity consumed during given periods.
7. Value of quantity on hand.

Two **general methods** are used for keeping such records: loose-leaf books, and loose-card files. First is generally preferred because it gives a sheet of a size large enough to carry all essential data. Ruling of sheet or card depends upon amount of information to be recorded and system of control in use. A simple form giving a perpetual inventory with prices and value spaces is shown in Form 7. Such a card is made out for each item of stores, describing in its heading the item, its location in the stores room, unit of issue, and unit price. Unit of issue is stated in number, pounds, feet, cubic

MATERIAL	UNIT
LOCATION	UNIT VALUE

Date		Quantity Received	Quantity Delivered	On Hand	Value On Hand		

Form 7. Simple Form for Perpetual Inventory

volume, or number of packages or containers. Below heading of card are entered date of each issue, quantities received and delivered, balance on hand, and its value.

A simple stores record form with "on order" columns is shown in Form 8. Three columns at left provide for recording date, order number, and quantities on order.

A more elaborate balance of stores record is shown in Form 9. This provides heading for necessary information to identify item and record requisitions and order numbers together with quantities and dates. Below, columns are provided for a record of receipts, issues, and balances.

An important part of the routine of handling stores is physically to show the **order point**. This provides for some form of physical separation of the minimum or order point quantity from rest of stock. When balance on hand is reduced to this amount, balance clerk reports this fact to the storekeeper, using form of Form 10. This method works out as follows: A

factory manager may determine that 2 months are required from time of placing request for a new supply of parts until lot is received in store-

MATERIAL								
LOCATION					UNIT			
					UNIT VALUE			
On Order			Date	Quantity Rec'd	Quantity Delivered	On Hand	Value On Hand	
Date	Order No.	Quantity						

Form 8. Simple Form for Stores Record, with "On Order" Column

room. Storekeeper from his records ascertains that 24,000 of these parts were used in preceding year. Therefore, time of order point is 2 months

						LOCATION			SYMBOL					
Req. No.	Order No.	Quantity	Date Ord.	Date Due	Time Needed	Ord. Point	Am't to Ord.	Cost Per						
RECEIPTS			ISSUES				ISSUES				ISSUES			
Date	Rec'd	Total	Date	Issued	Charge	Balance	Date	Issued	Charge	Balance	Date	Issued	Charge	Balance

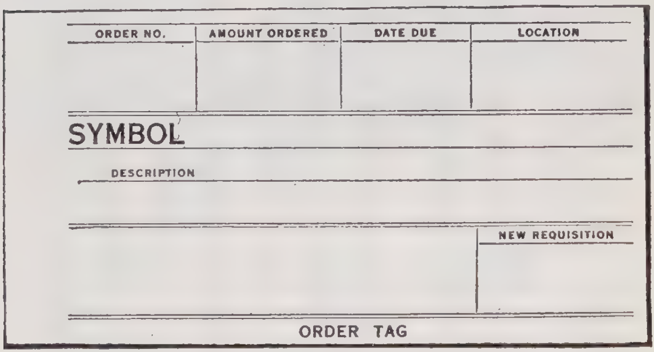
Form 9. Form for Balance of Stores Card
(From article by Clark and Davies, in *Management Engineering*, July, 1921)

and quantity 4,000 pieces. Storekeeper then counts out 4,000 parts and places them in one or more bins, separating them physically from rest of

stock by means of boards painted red or by some other sign. These parts cannot then be taken without showing the fact that order point has been reached.

Taylor Balance of Stores Forms for classified stores and for work materials are still more elaborate. They show for each article in the storeroom:

1. In 1st column quantity of articles ordered but not received in storeroom.
2. In 2nd column quantities on hand in storeroom.
3. In 3rd column quantities apportioned, received for shipping orders or manufacturing orders, but which have not been issued.
4. In 4th column quantities available (in excess of quantities apportioned to shipping orders and manufacturing orders) for future requirements. Quantity available must equal quantity on order (column 1) plus quantity in storeroom (column 2) minus quantity apportioned but not yet issued (column 3). Materials on order but not yet available, as soon as ordered, are entered in the available column (column 4).



ORDER NO.	AMOUNT ORDERED	DATE DUE	LOCATION

SYMBOL

DESCRIPTION

NEW REQUISITION

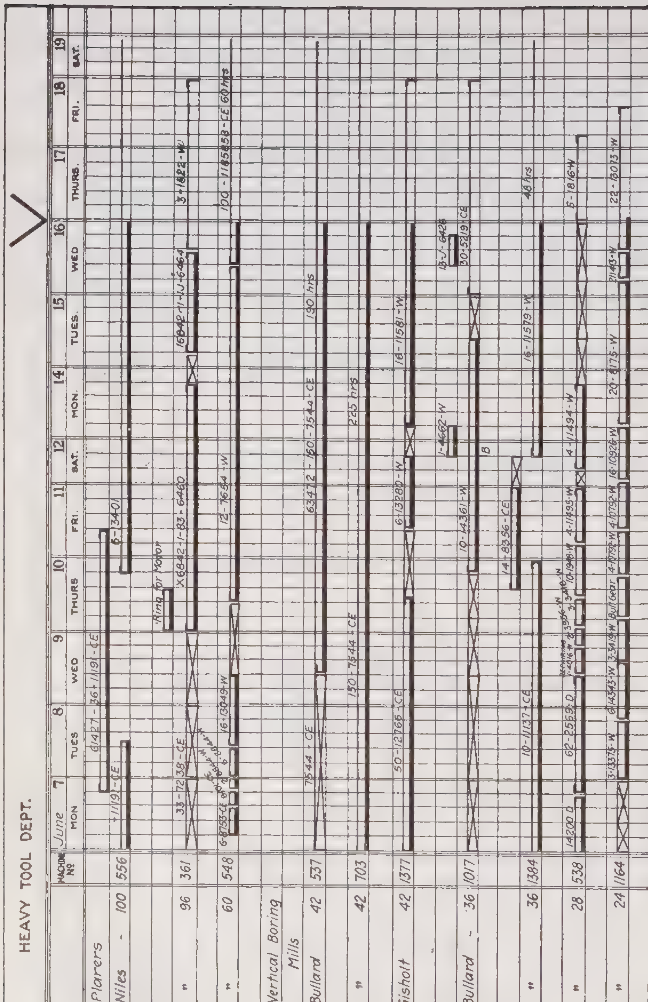
ORDER TAG

Form 10. Form for Order Tag

(From article by Clark and Davies, *Management Engineering*, July, 1921)

WORK IN PROCESS RECORDS.—Records of work in process are far more numerous and complex than those for stores, depending upon nature of product, manufacturing processes involved, volume handled, and particular system of control adopted. It is, therefore, possible to touch upon but two or three of the important elements in such a system of control records. Charts of the Gantt system are therefore presented, including layout chart, load chart, and progress chart.

Layout chart is used in planning production. A specimen as used in a machine shop is shown in Form 11. It is ruled to represent working hours of the plant and may extend over several weeks, or wide columns may represent days and narrower columns even hours. All machines and work benches in a department or a shop are listed at left. When an order is received a list of operations through which the material must pass is secured. On the layout chart opposite machine to be used first operation is laid out. An angle open to right indicates when job is to be started. An angle to



FORM 11. Gantt-Type Layout Chart for a Machine Shop
(From Wallace Clark, "The Gantt Chart")

LEGEND

Date job is scheduled to start.
Date job is scheduled to be completed.
Total time scheduled for order.
Work done.
Time required to make up for past delays.
Figures above lines indicate order numbers.
Indicates that chart was reproduced Wednesday night and shows how the work stood at that time.

REASONS FOR STOPPING WORK

B—Break-up.
H—Lack of heip.
M—Lack of material.
P—Lack of power.
R—Repairs.
T—Lack of tools.

left indicates when job is to be completed. A light line connecting two such angles indicates total time scheduled for the order.

In a similar way the machine upon which second operation is to be done is looked up to see when it will be ready for additional work. An order is then assigned to this machine and angles and light line are drawn. This procedure is continued until all orders are laid out.

As daily reports are received showing amount of work done, a heavy line is drawn under the light one. If work is exactly on schedule, end of heavy line will be directly under proper date and hour. If work is behind schedule, end of heavy line will be behind, or if work is ahead, end of heavy line will be ahead of assigned date.

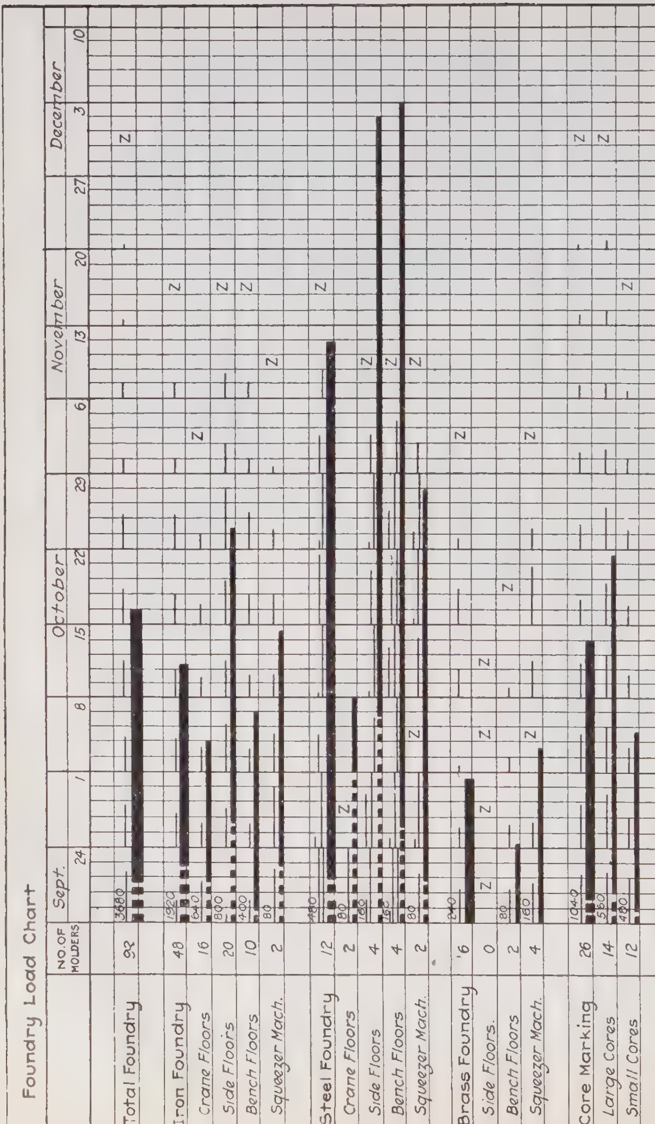
The **load chart** keeps executives of any producing plant advised as to load of work ahead. This information is of value to all executives for it gives an accurate picture of what work is to be done.

The load chart, while similar to the layout chart, is more compact and does not show details. A specimen for a foundry is shown in Form 12. On this chart divisions of the work shown are iron, steel, and brass foundry work and core-making. Secondary subdivisions are indicated in each case.

The **progress chart** shows what progress is being made in the execution of a plan or program. A specimen in Form 13 is for office work. Four departments are indicated and for each is recorded amount of work received each day, amount done, and amount left over at end of day. In this particular case each day's job consisted of work received up to 3 o'clock of that day. Figures at left of each space represent number of orders received day by day. The lines represent amount of work done, light ones showing daily production and heavy ones amount done since beginning of week. For instance, orders for A on Monday were 420 received, 252 passed through. Inasmuch as 252 is 60% of 420, a light line is drawn through 60% of the Monday space. A heavy line drawn under the light line indicates cumulative work done.

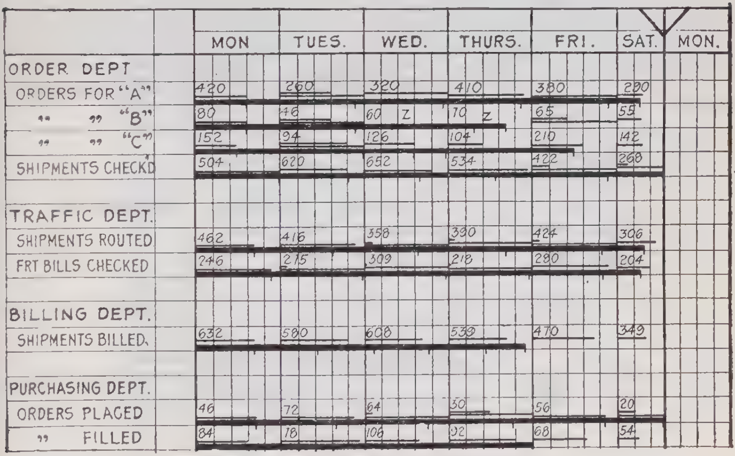
INSPECTION RECORDS.—Quality control is quite as important as quantity control. A successful product must be useful and marketable, i. e., it must possess characteristics different from those associated with mere number of volume. In practice, standards of quality are set up and then maintained by some form of examination or inspection.

In Form 6 (p. 1284) is illustrated a form of inspector's report for defective

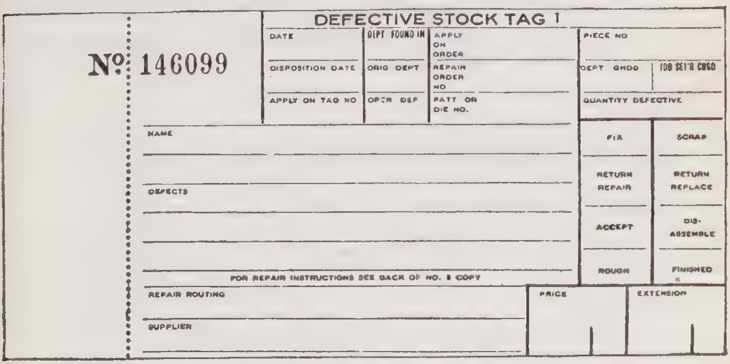


Form 12. Gantt-Type Load Chart for Foundry
(From Wallace Clark, "The Gantt Chart")

purchased material. A form having similar use, that is, to indicate disposal of defective work and furnish instruction for reclaiming or repair, is given in Forms 14a, 14b. This is from the practice of the Packard Motor Car Co.



Form 13. Gantt-Type Progress Chart
(From Wallace Clark, "The Gantt Chart")


DEFECTIVE STOCK TAG 1

No. 146099

DATE	DEPT FOUND IN	APPLY ON ORDER	PIECE NO
DISPOSITION DATE	ORIG DEPT	REPAIR ORDER NO	DEPT ORDD / FOR SET'G CHGD
APPLY ON TAG NO	OPER DEP	PATT OR DIE NO.	QUANTITY DEFECTIVE

NAME

DEFECTS

FIX	SCRAP
RETURN REPAIR	RETURN REPLACE
ACCEPT	DIS-ASSEMBLE
ROUGH	FINISHED

FOR REPAIR INSTRUCTIONS SEE BACK OF NO. 2 COPY

REPAIR ROUTING

SUPPLIER

PRICE

EXTENSION

Form 14a. Inspector's Tag Form for Disposing of Work (face)
(From G. S. Radford, "The Control of Quality")

Often no special tag is used for the material which is satisfactory, an entry being made on the work tag as to the number of pieces or amount which has passed inspection. The principal use for this tag is to supply information to stores department as to amount of material which has been apportioned and sent along for storage.

Equipment Control

DETERMINATION OF MACHINE RATES.—The method of using machine rates or machine hours as the basis for applying cost burden has grown in favor and is extensively used. This method is based on the theory that a portion of manufacturing burden should be applied to work performed on the basis of the production time required at machines on which work is done. Either three or four items are usually involved in a machine rate. These are:

1. Power cost
2. Depreciation
3. Maintenance (space)

In some cases another item is considered necessary to establish unit of interest on investment in the machine. This gives:

4. Investment (value)

INSTRUCTIONS FOR REPAIR

DEPT	OPERATION

Form G 20 150M 4 20

Form 14b. Inspector's Tag Form for Disposing of Work (reverse)

Procedure for setting a machine rate is simple. It involves determining at the outset the charges for proper power, depreciation, maintenance, and investment (if used), and then dividing these by a factor representing the reasonable number of hours which machines are expected to be in operation. This factor is often 80% or 85% of total possible hours. By this procedure a predetermined rate is established. Thereafter, for each month, actual power, depreciation, and maintenance charges will be known. Their total, with addition of the investment charge (if used), should be divided by the hours which the machines actually run to arrive at a monthly figure as to cost per hour for operation. Form 15 shows a form for determining the machine rate for a machine-shop department, developed by Myron A. Lee, and presented to the American Society of Mechanical Engineers, May, 1923.

DETERMINATION OF IDLE EQUIPMENT TIME.—Idle time of machines and equipment is recorded in various ways, one method in widespread use being the **Gantt Machine Record Chart.** Its purpose is to show whether or not machines and equipment are being used, and, if not, the

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MACHINE NO.	MACHINE	NUMBER OF MACHINES	AREA OF ONE MACHINE	PRESENT VALUE	SCRAP VALUE	LIFE IN YEARS	TOTAL AREA OF GROUP	FLOOR AREA CHARGEABLE TO GROUP	HOURS USED PER MONTH	HORSEPOWER RATING	HORSEPOWER-HOURS	POWER COST FOR GROUP	DEPRECIATION FOR GROUP	HOUR CHARGE FOR GROUP	SPACE CHARGE FOR GROUP	VALUE CHARGE FOR GROUP	TOTAL CHARGES FOR ONE MONTH	HOURLY RATE FOR GROUP	HOURLY RATE	ROUNDED RATE	MACHINE NO.
1	Double Spindle Turret.	6	40	3800	1410	15	240	1281	1008	7.5	3780	37.00	121.90	30.96	83.54	438	711.40	4.23	.705	.71	1
2	14" Surface Grinde.	5	89.8	2400	890	15	449.4	2398	840	15	6290	61.60	65	25.80	156.47	230.50	539.37	3.213	.643	.65	2
3	Lapointe Broach.	4	35.4	800	266	12	141.6	756	672	8	2680	26.24	22.90	20.60	49.42	61.50	180.66	1.075	.269	.27	3
4	Single Spindle Hartness	11	40	3000	1130	15	440	2346	1185	5	2960	28.99	177.50	36.40	153.02	634.	1029.91	6.13	.557	.56	4
5	14' Fay Automatic Lathe	15	37.2	2500	928	15	558	2981	2520	7.5	9450	92.49	203	77.30	194.52	720	1287.31	7.66	.510	.52	5
21	Fellows Gear Shaper	41	20.7	2675	802	10	849	4521	6880	3	10320	101.19	1050	203.20	295.02	2110	3759.41	22.39	.546	.55	21
31	Trans Case Boring Mach	10	47.25	3000	900	10	472.5	2521	1080	10	8440	82.29	287.50	51.20	164.52	577	1162.51	6.94	.694	.70	31
44	Universal Milling Machine	9	55	1650	612	15	495	2641	1512	5	3780	36.99	80.50	46.40	172.72	285.50	622.11	3.70	.411	.42	44
53	"Lo-Swing" Lathe	14	29.8	1440	635	15	417	2221	2352	10	11760	115.09	109.20	72.20	145.02	387	828.51	4.94	.353	.36	53
71	Butt Welder	2	15	400	120	10	30	160	336	10	1680	16.49	7.66	10.30	10.45	15.38	60.28	.359	.179	.18	71
72	Emery Wheel	2	4.88	150	50	12	9.76	521	336	3	504	4.93	2.16	10.30	3.40	5.77	26.56	.158	.079	.08	72
74	Grinding Wheel	2	1.56	140	46.50	12	3.12	166	336	2	336	3.28	2	10.30	1.08	5.38	22.04	.131	.065	.07	74
	Bench	17	16	50	5	15	272	1450	2790	-	-	-	4.58	85.40	94.50	16.32	200.80	1.195	.071	.08	B
												1283.00	3981.36	1500.00	3228.65	10,850.50	20,843.51				

FORM 15. Type of Chart Used in Determining Machine Rates of the Various Machines in a Plant

reasons for idleness. Causes of idleness, which may vary on different kinds of work, are usually as follows:

Waiting for set-up	Lack of power
Lack of operative	Lack of tools
Lack of material	Repairs to machines
Lack of orders	Holiday

Form 16 shows such an idle machine record presented by Owen Earhart. At the left of this record are listed machines, benches, or work spaces, designated by number. Opposite each the foreman indicates whether or not the machine has been running, by drawing a line across the space to indicate hours during which machine was in operation. A **blank space** indicates that the machine did not run and a **letter** or **symbol** gives the reason. If desired, a heavy line can be drawn to indicate cumulative running time of the machine for a whole week. Length of this heavy line is always equal to sum of lines for the various hours or days. A record of this kind is intended to bring action to correct lacks and failures which cause equipment idleness.

EQUIPMENT MAINTENANCE RECORDS.—Idleness of machinery and equipment because of repairs can be greatly lessened by systematic overhauling and maintenance. Responsibility for initiating such maintenance is one of the important functions of the planning department. For proper execution three things must be established:

1. Standards for maintenance.
2. Instruction cards for inspection, reports, and overhauling.
3. A tickler as a mechanical aid to show when the work must be done.

Setting up of standards is the responsibility of the engineering department. **Instruction cards** are prepared from these standards and are same in kind as used for regular production jobs. Best type of **tickler** is one which has a portfolio for each day in the year, large enough to insert all reminders, instruction cards, and reports. **Notices** to initiate maintenance work should be placed in the tickler in advance, to come out at proper intervals throughout the year for inspection of each part of equipment, and for examination and repairs at stated intervals of parts of machines, motors, boilers, engines, and belts likely to wear out or give trouble. One tickler for an entire plant is preferable to one for each department.

Forms for recording standards, for instruction cards, notices, and reports are simple in design and in general are well known.

Labor Control

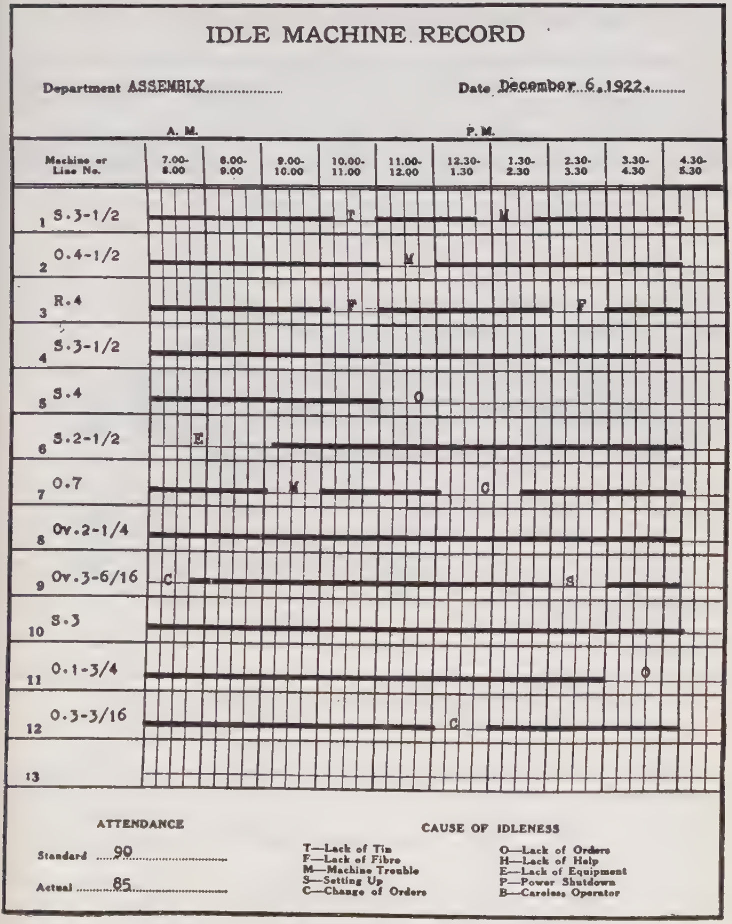
TIMEKEEPING.—A threefold purpose is served by timekeeping:

1. To provide information for the pay-roll department as to time worked, or amount of work done.
2. To advise the cost department as to the amount of direct labor to be charged to any specific work.
3. To advise the cost department as to the amount of overhead to be charged by means of a machine rate or labor rate to any specific work.

Prime functions of a timekeeping system according to Gantt are:

1. To know **who** worked.
2. To know **when** he worked.

3. To know **what** he did.
4. To know what he was **paid for it.**



IDLE MACHINE RECORD

Department ASSEMBLY Date December 6, 1922.

A. M. P. M.

Machine or Line No.	7.00-8.00	8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00	12.30-1.30	1.30-2.30	2.30-3.30	3.30-4.30	4.30-5.30
1 S.3-1/2				T			M			
2 0.4-1/2					M					
3 R.4				F				F		
4 S.3-1/2										
5 S.4					O					
6 S.2-1/2		E								
7 0.7			M			C				
8 Ov.2-1/4										
9 Ov.3-6/16	C							S		
10 S.3										
11 0.1-3/4									O	
12 0.3-3/16						C				
13										

ATTENDANCE

Standard 90

Actual 85

CAUSE OF IDLENESS

T—Lack of Tin
F—Lack of Fibre
M—Machine Trouble
S—Setting Up
C—Change of Orders
O—Lack of Orders
H—Lack of Help
E—Lack of Equipment
P—Power Shutdown
B—Careless Operator

FORM 16. Gantt-Type Idle Machine Record

(From article by Owen Earhart, *Management Engineering*, April, 1923)

TIMEKEEPING METHODS.—The following timekeeping methods have proved inadequate:

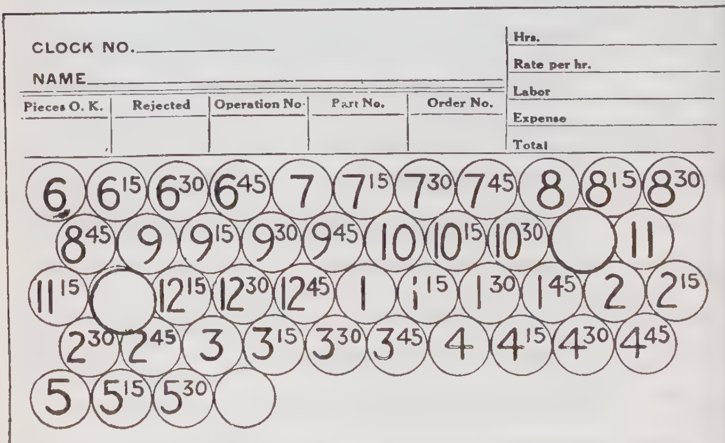
1. To have workmen write down their time in pencil at end of day or week, or upon completion of a job, operation, etc.

2. To have foremen write down such reports for workmen.
3. To employ timekeepers to visit workmen and secure records of operations from them.

Therefore, **in-and-out time records** and **job time records** have grown in favor and use.

The **in-and-out time record** is made by ringing or punching a clock which records on a tape or card the time of entering and leaving work in morning, at noon, after lunch, at night, and for overtime and on holidays. This record gives a check on attendance. Its various forms are well known.

The **job time record** is rapidly gaining acceptance according to Charles W. Lytle, from whose investigation and study[1] the following summary has been condensed.



Form 17. Time and Job Card for Federal Time Recorder
(From article by C. W. Lytle, *Management Engineering*, June, 1923)

Vital feature is to record starting and finishing times of each job without allowing, juggling, or miscalculating. This requirement is satisfied if worker turns in a card when he finishes each job and receives another card for his next job. To prevent human error, a **mechanical time stamp** is advisable, and various kinds are available.

In some Gantt and Taylor management installations the job time record is made to serve as an in-and-out time record also, by having each workman use his rack in-ticket in the morning for his first job ticket, and his last job ticket at night for a rack out-ticket. "Lates" must go to office for first job tickets and are checked.

Punching time stamps are probably the simplest form. A figure is punched out of the time or job card representing starting time, and another finishing time. Form 17 shows a job card used with **Federal Time Recorder**, and Form

[1] *Management Engineering*, June, 1923, p. 429.

UPPER FIGURES ARE HOURS ELAPSED — 67 CENTS PER HOUR — LOWER FIGURES ARE DOLLARS AND CENTS

.25	.5	.75	1	1.25	1.5	1.75	2	2.25	2.5
.17	.34	.51	.67	.84	1.01	1.17	1.34	1.51	1.68

.25	.5	.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5
.17	.34	.51	.67	.84	1.01	1.17	1.34	1.51	1.68	1.84	2.01	2.18	2.35	2.51	2.68	2.85	3.02	3.18	3.35

2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	7.25	7.5	7.75
1.84	2.01	2.18	2.35	2.51	2.68	2.85	3.02	3.18	3.35	3.52	3.69	3.85	4.02	4.19	4.36	4.52	4.69	4.86	5.03	5.19

5.5	5.75	6	6.25	6.5	6.75	7	7.25	7.5	7.75	8	8.25	8.5	8.75	9	9.25	9.5	9.75	10	10.25
3.69	3.85	4.02	4.19	4.36	4.52	4.69	4.86	5.03	.5.19	5.36	5.53	5.70	5.86	6.03	6.20	6.37	6.53	6.70	6.87

67

Form 18. Master Card to be Used with Job Card of Form 17
(From article by C. W. Lytle, in *Management Engineering*, June, 1923)

No. 215 Date NOV 15 1920	MORN IN	$4\frac{1}{2}$	MON AM 7 29
R. C. Dixon	NOON OUT		MON PM 12 00
NAME	NOON IN	$4\frac{1}{4}$	MON PM 12 28
Hours $8\frac{3}{4}$ Rate 60¢	NIGHT OUT		MON PM 4 47
Amount $5.25	Overtime IN		
Form K 14 - 952 Fac.	Overtime OUT		

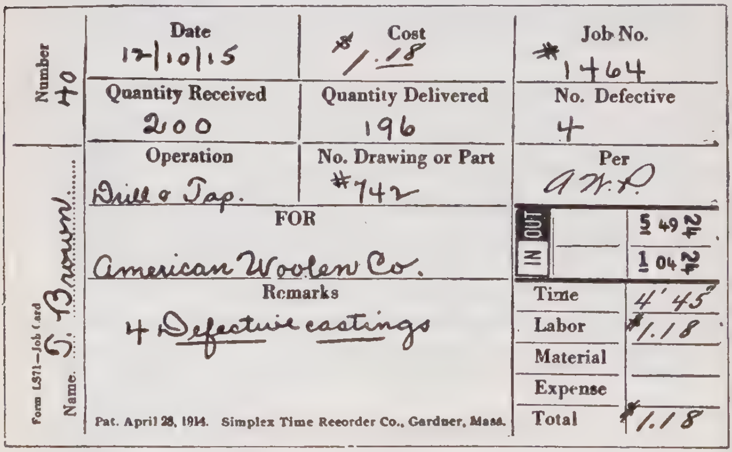
ORDER No.	WHAT ARE YOU DOING?	CLOCK RECORD		
156	Tapping	Stop	2	MON AM 9 30
		Start		MON AM 7 32
372	Do	Stop	$1\frac{1}{2}$	MON AM 11 00
		Start		MON AM 9 31
283	Drilling	Stop	1	MON PM 12 00
		Start		MON AM 11 2
178	Do	Stop	$1\frac{1}{2}$	MON PM 2 00
		Start		MON PM 12 30
247	Do	Stop	$2\frac{3}{4}$	MON PM 4 45
		Start		MON PM 2 1
		Stop		
		Start		
		Stop		

Form 19. Job and Time Card, with "Start" and "Stop" Times
(From article by C. W. Lytle, *Management Engineering*, June, 1923)

18 a **master wage card.** Elapsed time is read instantly in upper figures when time card is placed on master card.

There is a master card for each hourly wage-rate, carrying a set of figures for elapsed time and accompanying wage value at successive 15-minute periods throughout day. Cost clerk places first punched hole in the job card over the zero location on the master card, and reads both elapsed time and labor cost through second punched hole. These intervals can be made less than 15 minutes and a time clerk can do the punching.

Printing time stamps are available in wide variety. One, that of Cincinnati Time Recorder Co., uses a card similar to the common workman's time card, but prints "start" and "stop" times. See Form 19, a form used



Number 40

Date 12/10/15 | Cost $1.18 | Job No. #1464

Quantity Received 200 | Quantity Delivered 196 | No. Defective 4

Operation Drill & Tap. | No. Drawing or Part #742 | Per A.W.P.

FOR American Woolen Co.

OUT 5 49 24
IN 1 04 24

Remarks 4 Defective castings

Time 4'45
Labor $1.18
Material
Expense
Total $1.18

Form L571—Job Card Name S. Brown

Pat. April 28, 1914. Simplex Time Recorder Co., Gardner, Mass.

Form 20. Card for Stamping both "Start" and "Finished" Times
(From article by C. W. Lytle, *Management Engineering*, June, 1923)

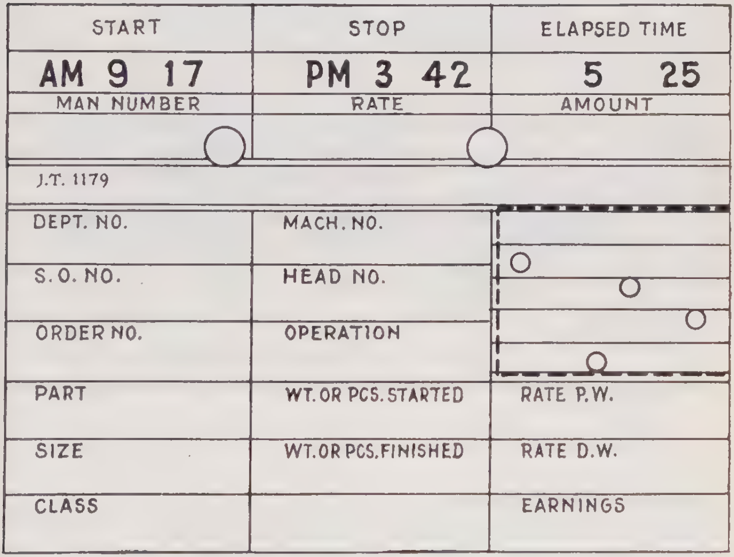
for daily in-and-out pay-roll records; totals should check. Form 20 shows another form of combined job and time ticket as used by Simplex Time Recorder Co.

Printing and elapsed time stamps were the next logical step in attempting to develop error-proof timekeeping. Method involves automatic figuring and stamping of elapsed time as well as clock times. There are many of these recorders, and they approach the problem in several distinctly different ways. The **New International Cost Recorder** with two-color ribbon can be made to print records in periods, hours, and minutes, or tenths and hundredths of hours. The latter units greatly facilitate adding. See Form 21.

The Bishop Calculating Recorder Co. makes a recorder which gives the elapsed time without giving finishing time as such. Two time scales are printed along the left margin of the job card. One of these scales is in clock figures and indicates the starting time when punched. Workman merely has to place card against a stationary abutment and the instrument automatically locates any starting time. At end of the job the workman again places

card, but with reverse side up, and it automatically locates the correct elapsed time on the other time scale, which is in terms of hours and minutes regardless of clock time. In cost department each job ticket is used with a **master rate sheet** to locate the labor cost for given elapsed time. With any of these instruments there is supposed to be a separate job ticket for all **idle intervals.**

Synchronized clock systems do away with discrepancies in running of different clocks. Such systems are often elaborate and one (**Num System** of Stromberg Electric Co.) computes elapsed time as follows: Each clock register contains a set of numbered printing wheels for stamping date and



START	STOP	ELAPSED TIME
AM 9 17	PM 3 42	5 25
MAN NUMBER	RATE	AMOUNT
J.T. 1179		
DEPT. NO.	MACH. NO.	
S.O. NO.	HEAD NO.	
ORDER NO.	OPERATION	
PART	WT. OR PCS. STARTED	RATE P.W.
SIZE	WT. OR PCS. FINISHED	RATE D.W.
CLASS		EARNINGS

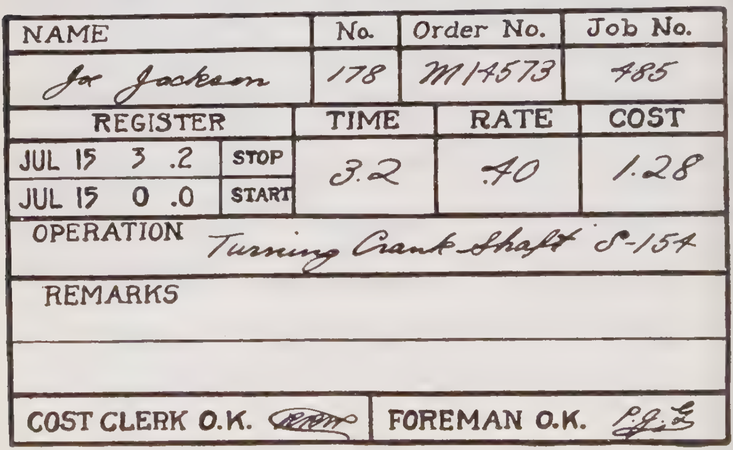
Form 21. Form of Elapsed-Time Time Card
(From article by C. W. Lytle, *Management Engineering*, June, 1923)

time period on job ticket. At end of each period central clock advances period wheel one unit by means of an electric impulse. Because 6 minutes is an even tenth of an hour, it is a natural period to use in stamping. Minute hand of each clock moves forward at end of each minute. Recorders automatically start and stop in conformity with any given schedule of hours so that any noon hour is eliminated as well as A.M. and P.M. After an entire working day is passed, including overtime and night work, if any, printing mechanisms are automatically set at zero, at which point they remain until they automatically begin operations again from that point, at exact time working hours begin the following morning. See card of Form 22.

To illustrate, assume that a manufacturing plant begins regular operations at 7 A.M., the lunch period is from 12 noon to 12:30 P.M., and if there is

night work or overtime the supper time is from 5 P.M. until 6 P.M. Basis of time used is the hour and tenths of an hour, and calculations are made thus:

If an operation is started at 7:02 A.M. imprint will show	0.0
If stopped at 3 P.M. imprint will show	7.5
Actual working time is the difference	7.5
Or 7½ hr., from which lunch period of ½ hr. does not have to be deducted.	
If an operation is started at 8:07 A.M. imprint will show	1.1
If stopped at 9:12 P.M. imprint will read	12.7
Actual working time is the difference	11.6
Or 11 6/10 hr., from which ½ hr. for lunch and 1 hr. for supper do not have to be deducted.	



NAME	No.	Order No.	Job No.
Jo Jackson	178	M14573	485

REGISTER		TIME	RATE	COST
JUL 15 3 .2	STOP	3.2	.40	1.28
JUL 15 0 .0	START			

OPERATION Turning Crank Shaft S-154

REMARKS

COST CLERK O.K. FOREMAN O.K.

FORM 22. A "Num-Hour" Card

(From article by C. W. Lytle, *Management Engineering*, June, 1923)

Periodograph System of Gisholt Machine Co. is based on entire pay period, figured and stamped in tenths of hours, or 6-minute intervals. A separate time card is used for each job. At start and end of any idle-time periods a blue card is punched. A separate absence card is punched by time clerk at beginning and end of each absence period. Periodograph is also applied to systems where Hollerith machines are used for tabulations. A regular card is shown in Form 23.

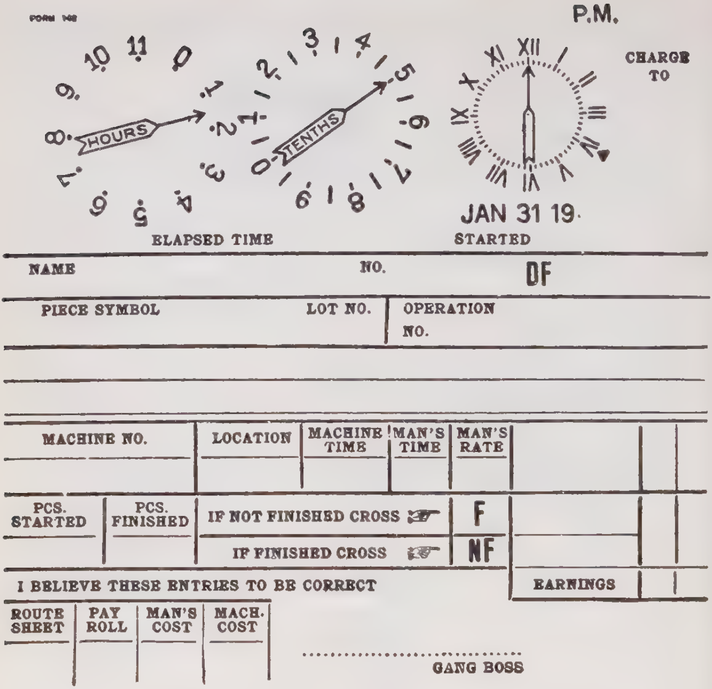
Clock face time stamps are used in several recorders to print clock dials with indicating symbols.

The **Calculagraph** prints an arrow to indicate starting time. At finish, elapsed time is printed on the familiar meter principle, one dial giving hours and a secondary dial giving tenths of an hour. See Form 24.

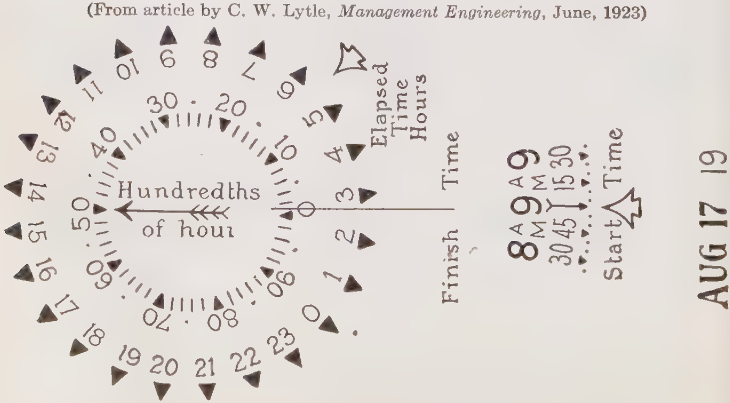
NO 510	NAME Wilke	
ORDER NO. 2118	OPERATION Drill	
PC. NO 80		
NAME Bracket		
NO PIECES 100		
PCS STARTED 100		
PCS FINISHED 100	JUN 6 540	
MACH. NO 142	JUN 5 387	15.3
	JUN 5 382	
	JUN 4 270	11.2
	JUN 3 x 300	1.5
	JUN 3 x 270	30
	JUN 3 270	
	JUN 3 260	1.0

STOPPED ✓ COMPLETE ✓	STRAIGHT TIME 30.5	COST 18.30
NEXT OPERATION Co. Sink	OVERTIME ALLOWED 1.5	COST 90
AT MACH. NO. 146	TOTAL TIME 32.0	TOTAL COST 19.20
	RATE .60	

Form 23. A Periodograph Time Card
(From article by C. W. Lytle, *Management Engineering*, June, 1923)



Form 24. A Calculagraph Time Card
(From article by C. W. Lytle, *Management Engineering*, June, 1923)



Form 25. A Tempograph Time Card
(From article by C. W. Lytle, *Management Engineering*, June, 1923)

The **Tempograph** prints the portion of a clock dial indicating starting time, and then a smaller dial at finish on which an arrowhead has advanced from zero to number of elapsed hours and hundredths. This instrument can be arranged to compute money value of time at any hourly rates for any amount up to $24. It always prints the date on each card. See Form 25.

The **Arrowgraph** divides a clock dial into various job times of a single workman. When noon hour is 12:00 to 12:30, the period figure at 12:00 is repeated at 12:30, so that elapsed time can be secured with only one subtraction.

Tape recorders are available in several kinds adapted to special needs, as separating employees entitled to attendance bonus from others, recording idle time, and making up pay-roll.

DETERMINATION OF IDLE TIME.—Idleness of employees is usually and best recorded graphically. A widely used form is the **Gantt Man Record Chart** which shows whether a man does a day's work and, if not, the reason for failure.

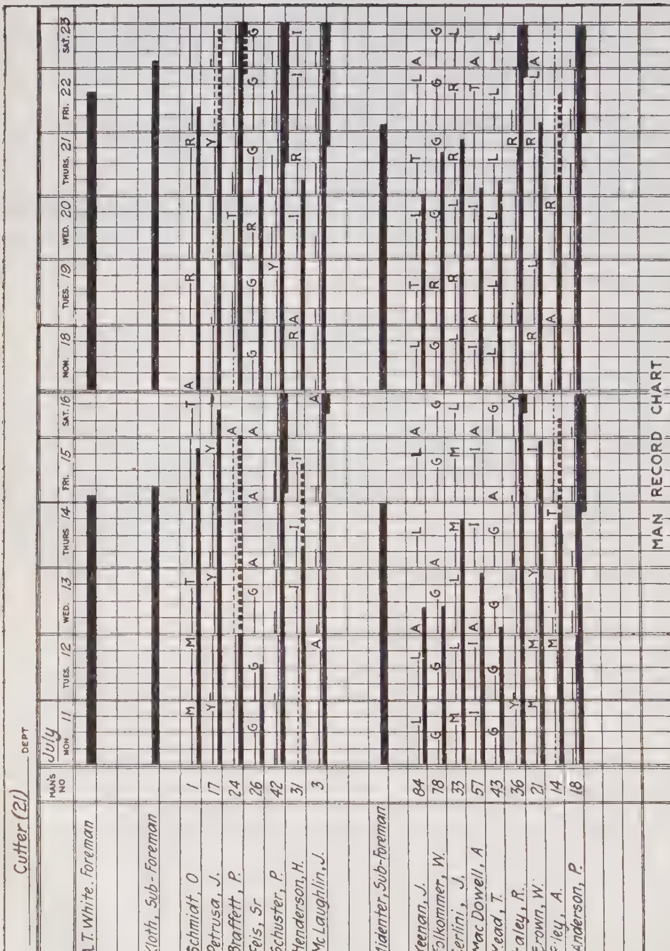
Reasons for falling behind are:

- Absent
- Green operator
- Lack of instructions
- Slow operator
- Material troubles
- Repairs needed
- Tool troubles
- Holiday
- Smaller lot than estimate is based on.

A **typical chart** is shown in Form 26, from the practice of Wallace Clark. This chart is similar to that used for recording idle machine time. At left are names of the men. At top is a space for a heavy line for operation of the department as a whole; opposite name of each man is drawn a line through daily work space, indicating what was done compared with length of space, which represents amount of work man should have done. If an operator produces 200 units in a day where he should have produced 300, length of line is $\frac{2}{3}$ length of space. The $\frac{1}{3}$ of space through which no line is drawn indicates idleness.

Clark describes other features of the chart:

> Expressing this in a different way, the space represents the time actually taken to do a certain amount of work, while the light line shows how much time it could reasonably be expected to take. For instance, a workman has taken 8 hours to do work which the foreman had expected him to do in 4 hours. The width of the column for the day represents 8 hours. He therefore draws a light line through an amount of space equal to 4 hours. Another workman has done in 8 hours what the foreman expected would require 12 hours of a good man's time. He therefore draws a light line through an amount of space equal to 12 hours, i.e., one line all the way across and another halfway across. Light lines drawn through a second day's space are offset from those of the first day so that they will not appear to be continuations. If the foreman has not estimated the time the work should take, he draws a broken line through an amount of space representing the time actually spent on that work. The portion of the daily space through which no line is drawn shows how much the operator has fallen behind in the work expected of him, and the letter at the beginning of the space indicates the reason. At the end of the week a heavy cumulative line is drawn to show the weekly total of each operator, the heavy line always being equal in length to the sum of the light lines. To get the totals of the various groups and of the whole department, the hours represented by the cumulative lines of the individual workmen are added and divided by the number of men. A line about $\frac{1}{8}$ inch wide is used for a group total and $\frac{1}{6}$ inch wide for a department total.



FORM 26. Gantt-Type Man Record Chart
(From Wallace Clark, "The Gantt Chart")

LEGEND

Width of daily space represents amount of work that should have been done in a day.

Amount of work actually done in a day.

Time taken on work on which no estimate is available.

Weekly total of operator Solid line for estimated work; broken line for time spent on work not estimated.

Weekly total for group of operators.

Weekly total for department.

The portion of the daily space through which no line is drawn shows how much the man has fallen behind what was expected of him.

REASONS FOR FALLING BEHIND

A—Absent.
G—Green operator.
I—Lack of instructions.
L—Slow operator.
M—Material troubles.
R—Repairs needed.
T—Tool troubles.
V—Holiday.
Y—Smaller lot than estimate is based on.

When there is more than one reason for failure to do the work in estimated time, the reason entered on chart is determined by asking questions in the following order:

R—Was the machine in good condition?
T—Were the tools and fixtures in good condition?
I—Was the operator given proper instructions and sufficient information?
M—Was trouble experienced with material?
G—Was the operator too green to do the job?
L—Was the operator too slow?
Y—Was the lot smaller than estimate is based on?

A change in circumstances may alter the sequence of these questions.

OPERATION ANALYSIS.—Analyses of shop or office operations are made for several purposes, the most important being to secure information,

1. To set rates.
2. To improve processes or operations of a job.
3. To improve quality of product.
4. To check production in case a standard time or rate is not equaled.
5. To determine personnel factors necessary to do a job.

Three **general methods of analysis** are used:

1. Time study
2. Motion study
3. Job analysis

Time studies are used to secure information to establish standard time set rates, improve product, improve operation and check production. **Motion studies** provide information to record methods and establish standard times. **Job analysis** provides information as to the human content of the job, in setting occupational rates.

TIME STUDY.—Time study is a method of measuring, dealing primarily with time. Its principal objects are:

1. Determination of possible improvements in equipment and conditions for producing a given piece of work or for performing a specified task.
2. Determination of possible improvements in processes or method of performing work.
3. Determination of amount of time in which work or task should be performed, conditions being satisfactory and equipment effective.

Analysis of the job into its **elementary divisions** is first step in taking a time study. Observer or time study taker lists these divisions in the order of their occurrence, splitting the job into a greater or less number, depending upon work and conditions. Merrick[2] explains the elementary divisions as:

In studying the operations in a lathe, a cutting tool would be inserted in and removed from the tool post several times during the course of the work. If a study is being made to determine the length of time required for certain cutting operations, that is, if we are studying the work itself and not the machine in which the work is being done, it probably

[2] Time Studies for Rate Setting, pp. 7, 8.

would be sufficient to enter the time required for inserting the tool in the tool post as a single item, viz:

Put tool in post.. 0.30 min.

On the other hand, if we are studying the lathe with a view to determining the best method of handling it and the tools pertaining to it, it would be desirable to analyze this operation of putting the tool in the tool post still further, as follows:

Get tool from tool stand	0.03	min.
Measure height of tool	0.06	"
Put packing in tool post	0.07	"
Put tool in post	0.03	"
Set tool in position	0.03	"
Tighten tool-post setscrew	0.08	"
Total	0.30	min.

Time study observations are made with the aid of a stop-watch whose dial is divided into 10th's and 100th's of a minute, hands so arranged that they can be stopped and restarted from any point without being set back to zero. Recording is done on an **observation sheet** usually carried on a board which has an opening or pocket to hold watch. A scale or rule for measuring and a speed indicator may be added to this equipment. As readings of stop-watch supply time measure of the operation and are information on which time standards are based, the method of handling the watch is important. Lichtner described five methods: continuous, over-all, repetitive, accumulative, cycle.

1. **Continuous method** gives most satisfactory results in majority of cases and on most operations. Elements are recorded in sequence without stopping watch.

2. **Over-all method** is frequently attempted by novices, for it reduces figuring to a minimum but is of little value except for checking or providing supplementary information. It consists of taking total time for a combination of several elements or even for an entire operation, starting watch at beginning of group or operation and making no record until it is finished.

3. **Repetitive method** is also used by novices. Observer starts watch at beginning of an element, stops watch when element is completed, and records duration. Watch is then thrown back to zero. When element appears again in cycle observer starts watch, which is at zero, stops it when element is completed, and once more records time taken. This method is easy for the observer as it does not require much figuring.

4. **Accumulative method** is adapted to special cases, particularly for recording of elements which are very fast, ranging from 0.003 to 0.02 minute. Observer uses two or more stop-watches; number depending upon his ability and duration of elements. Each watch is used for a separate element. As one element is completed, the watch recording its time is stopped and another watch started for following element, and so on.

5. **Cycle method** is also used for very fast elements. It consists of taking the unit times for the sum of a part of the elements, varying those selected until a group of simultaneous equations has been written. Solving these equations gives the unit time for each element.[3]

---

[3] Lichtner, Time Study and Job Analysis, pp. 165–172.

Operation: Washing outside of factory windows.
Crew: Two men.
Size of Window: 30 panes—10 x 16 in.
Process: Clean with hose and wash with brush. One man washes from ladder, both windows, top and bottom, with hose, then he cleans top windows with brush from ladder, meanwhile the other man cleans bottom windows from ground with brush, then ladder man rinses down.

Element	Preparation Time Minutes		Elementary Time Minutes
1. Change card	2.10		
2. Walk to tool shed (1.75), get hose, etc. (1.00)	2.75		
3. Walk to job (1.40), unroll hose and connect (2.40)	3.80		
4. Set ladder against building	1.00		
5. Shift ladder (0.75) to next window and climb (0.30)			1.05
6. Close window (0.18) and pass up hose (0.39)			0.57
7. Wash upper window with hose			0.64
8. Step down part way			0.12
9. Wash bottom window with hose			0.64
10. Drop hose, get brush (0.09), climb ladder (0.30), other man washing 30 panes in other window			0.39
11. Wash 30 panes with brush—0.066 per pane x 30			1.98
12. Climb down (0.30), get hose (0.09), and climb again (0.30)			0.69
13. Rinse top window with hose			0.81
14. Step down part way			0.12
15. Rinse bottom window with hose			0.81
16. Climb down			0.18
17. Move to next window and rinse brushes.			0.30
18. Change hose connection for each fifth window			0.81
19. Remove ladder down	.90		9.11
20. Disconnect hose	2.40	ALLOWANCE	2.89
21. Get (1.0) and take tools to tool shed (1.75) and walk to window (1.75)	4.50	Time per window	12.00
		and Time per pane	
22.	17.45	(2 men)	0.2
		Per pane (1 man)	0.4
23. ALLOWANCE	5.35		
24. PREPARATION	22.80		

FORM 27. Time Study of Washing Factory Windows
(From *Management Engineering*, July, 1922)

A **skilled employee** should be selected for time study for these reasons, according to Lichtner:

1. His motions are more uniform.
2. He works more steadily.
3. He uses best methods and adapts himself more easily to new ones.
4. Influence of personal equation is less pronounced.
5. Results manifest his fluctuations and are more dependable.

In working up observations for each element, abnormal items are frequently discovered. These are known as **variations** and are usually eliminated before averaging a group of individual times to determine the time for the element. Various mathematical principles are followed to determine which items to eliminate. Merrick advises eliminating those 25% less or 30% greater, respectively, than an adjacent item.

Preparation time and **operating time,** whether machine or hand, are usually totaled separately, thus giving a unit time for a sequence of elementary operations made up of two factors. To this time are added several allowances to give the standard time. Two specimen time studies are given in Forms 27 and 28. First is by Merrick, second by Lichtner.

Machine Operation—Hook Vent, Striped Tweed, Unserged Seams.

Symbol	Elements	Sewing Time Min.	Handling Time Min.	Delays Min.
a	Arrange 1st ½ back	....	0.19	....
b	Sew and cut tape on 1st ½ back	0.13	....	....
c	Arrange 2nd ½ back	....	0.08	....
d	Sew and cut tape on 2nd ½ back	0.14	....	....
e	Pair 1st and 2nd half	....	0.18	....
f	Join backs ⅔ up	0.20	....	....
g	Tape and join balance of backs	0.29	....	....
h	Cut vent	....	0.21	....
i	Place stay under vent	....	0.52	....
j	Sew under vent	0.11	....	....
k	Inspect	....	0.23	....
l	Cut seam and lay aside	....	0.09	....
	Total sewing time	0.87	....	....
	Total handling time	....	1.50	...
	Total time for cycle	....	2.37	....
	Necessary Delays			
	Get lot	....	....	....
	Tie up	....	....	...
	Rest	...	....	....
				0.52
			Call	25%

2.37 plus 25 per cent = 2.97 min. per coat. 20.2 coats per 1 hr. 191.8 coats per 9 hr.

Form 28. Time Study on an Operator in Making a Man's Sack Coat

(From article by W. O. Lichtner, *Management Engineering*, May, 1922)

PRODUCTION STUDY.—After a standard time or rate has been set from a time study, it sometimes happens that operator is unable to equal

set time or rate. Failure may be due to one or more of several causes as: improper material, improper equipment, machine trouble, tool trouble, unnecessary delays, waste of time, lack of skill, or incorrect standard. A study made to determine cause of such failure is known as a production study. It consists in observing job for a comparatively long period, as a day or possibly several days, to determine time being taken for various elements or cycles of elements, and for all interruptions and delays of whatever kind. It is, therefore, a special form of time study conducted and worked up as previously outlined.

JOB ANALYSIS.—Job analysis is applied to several forms of study but is used here for that form intended to bring out the employee qualifications desirable and the nature and conditions of work for a particular job or task. This method has been developed to a high degree by the International Harvester Co., as reported by Arthur H. Young.[4] A specimen job specification card for an operator on a sensitive drill press is shown in Form 29. The method used in making some 900 such job analyses was to establish a general occupational rating committee and a plant committee at each factory. These groups made the preliminary job analysis and therefrom the job specifications.

MOTION STUDY.—A special form of operation analysis using a motion picture camera and aimed principally to record "the one best way," is generally known as motion study. The devices and methods have been originated by The Gilbreths and have been used to a limited extent except in their own practice. Method records surrounding conditions of work, machine, and operator simultaneously with time. **Micromotion records**, as used to improve methods or set rates, are interpreted by a special form of graph known as a **simultaneous motion cycle chart.**

STANDARD TIMES.—Standard times as used in rate-setting are the sum of the selected unit times from time study observations and certain allowances. Merrick allows for fatigue and variation, for unavoidable delays, for machine delays, and, if necessary, for personal delays. Lichtner adds to the sum of the standard time of each element an allowance for necessary delays, for necessities of life, and for fatigue.

Merrick, whose work has been done largely in the metal trades, has developed factors for these allowances which are applicable in connection with any good time-study work. Fatigue and variation allowances have been plotted into curves and a general formula derived by Carl G. Barth, which is:

$$P = 20 + \frac{49.5 - 0.325C}{\sqrt{0.376 - 0.0000216C^2 + T}}$$

Here P is percentage allowance, C percentage of handling time, and T minimum selected time for cycle.

Large chart (Form 30) gives ten of these curves for handling times, varying from 10% to 100% of time for cycle on which allowance is to be made. Abscissas of large curves cover time in minutes from zero to 20 minutes. Smaller curve, which is useful for short-time cycles, has abscissas up to 2 minutes.

Outstanding feature of these curves is that the larger the cycle time, the smaller the corresponding percentage of allowance. Under no condition is allowance time less than 20%, as shown by the general formula. Percentage allowance is made upon total of handling time. That is, for a job compris-

[4] *Management Engineering*, May, 1923, p. 301.

W. P. 52 **JOB SPECIFICATIONS** INTERNATIONAL HARVESTER COMPANY (INCORPORATED)

Job Name **DRILL PRESS OPERATOR—SENSITIVE** Job No **D-23**

Departments ____ Group No. ____

DESIRABLE EMPLOYES' QUALIFICATIONS

☒ Male ☒ Female ENGLISH ☒ Speak ☒ Read ☒ Write SCHOOLING ☒ Public ☐ High ☐ Technical ☐ University

NATURE AND CONDITIONS OF WORK

☐ Floor	☒ Standing	☐ Heavy or Fatigue	☐ Quick	☐ Rough	☐ Hot	☐ Dust	
☐ Bench	☒ Sitting	☐ Medium	☐ Slow or Monotonous	☒ Close	☐ Cold or Outside	☐ Fumes	☐ Dirty
☒ Machine	☐ Stooping	☒ Light	☐ Dangerous	☐ Exacting	☐ Wet or Moist	☐ Acids	☐ Greasy

Kindred Occupation ____

Machine Tools Operated ____

Personal Hand Tools Required ____

Approximate time required to train an inexperienced employe to do this work ____

RATE DATA

☐ Day work job ☐ Piece work job

Starting rate ☐ hour ☐ day ☐ week is from ____ to ____

Day Work Rate ☐ hour ☐ day ☐ week is from (a) ____ (b) ____ (c) ____ to ____

Base Rate ☐ hour ☐ day ☐ week is ____

Approximate Piece work Earnings ☐ hour ☐ day ☐ week are from ____ to ____

Overtime ____ Bonus or Premium ____

Remarks ____

Form 29a. Job Specification (face)

(From article by Arthur H. Young, *Management Engineering*, May, 1923)

Job Name **DRILL PRESS OPERATOR—SENSITIVE** Job No. **D-23**

THE DUTIES OF THIS JOB ARE:

To set up and operate Sensitive Drill Press on various kinds of light metal parts.

NOTE: At some Works the piece workers buy the high speed drills used, and also, the setting up work and tool grinding is done by a Set Up Man. (See Job No. S-41.)

THE NECESSARY EMPLOYE QUALIFICATIONS TO FILL THIS JOB ARE:

(1) Must be capable of taking care of and operating a Sensitive Drill Press on various kinds of light metal parts, working to samples, instructions or drawings.

(2) Must be capable of using the ordinary measuring tools, gauges or templates of various kinds.

(3) Must be familiar with the machine adjustments and controls, capable of setting up job, jigging parts and doing accurate work.

(4) Must be capable of feeding a Sensitive Drill so as to get maximum production with minimum breakage of drills.

(5) Should be familiar with high speed Steel Drills and be capable of grinding and setting drills and other tools used.

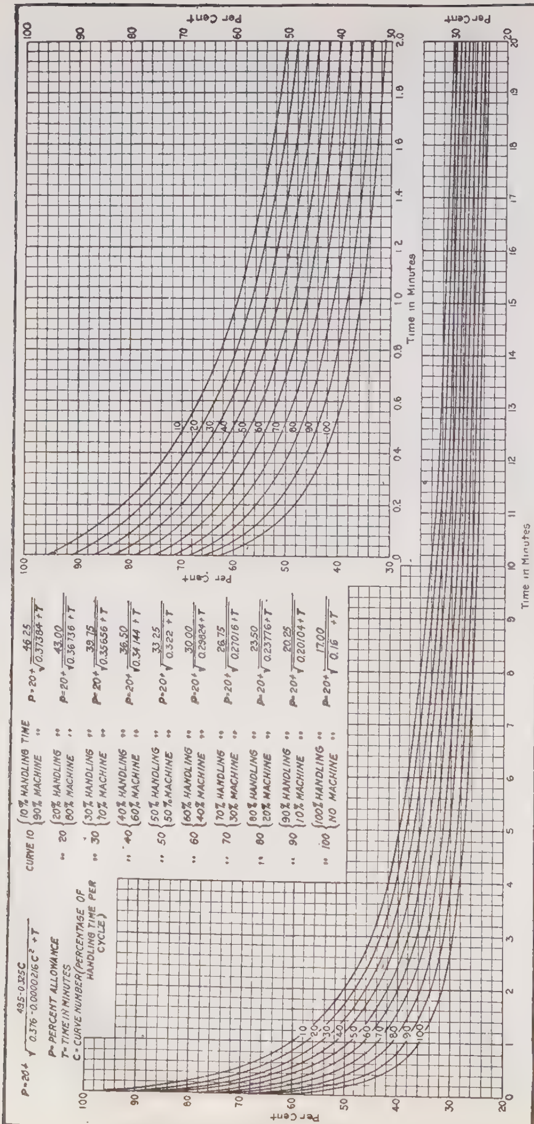
(6) Must have a working knowledge of the proper speeds to use to get the best results with different kinds of material.

(7) Must be an active, careful workman, capable of and willing to follow instructions.

(8) It is desirable that he have had previous similar experience.

Remarks At some Works the employe works to drawings from which he gets the necessary sizes, etc., instead of working to samples.

FORM 29b. Job Specification (reverse)



FORM 30. Curves of Time-Study Allowances
(From *Management Engineering*, February, 1922)

ing 3 minutes machine time and 2 minutes handling time, the 40% curve is used and intersection of 2 minutes ordinate with curve determines allowance percentage to be added to handling time in making up task time. Where there is no machine time the curve representing 100% handling time is used.

UNAVOIDABLE DELAYS.—There are certain delays due to necessary motions which occur irregularly during the performing of a job in one or more cycles in which work is analyzed. Such motions do not ordinarily manifest themselves in time study. To arrive at standards, therefore, time studies would have to be taken extending over long periods so that the observer may be sure that observations have been made of every class of interruption likely to take place. Examples of such unavoidable delays are: changing from one job to another, receiving instructions, adjusting conditions around the working place, inspecting completed parts, and the like. They are of a nature to interfere more or less with operator's attention to his work.

Unavoidable delays are usually cared for by adding an **arbitrary allowance.** Merrick uses factor of 25% of the preparation time. These allowances are often a very small proportion of time for the whole job and may be of little practical value other than their effect upon mental attitude of operator. On automatic work they are often of importance.

Personal Delays.—Allowance must be made for personal needs, rest periods, wash-up periods, and the like. On some kinds of production and automatic work of an intensive nature, such an allowance is of importance. It must be derived from time studies extending over relatively long periods.

Machine Delays.—The allowance for machine delays classifies under three heads:

1. Power-driven operations, power-fed.
2. Power-driven operations, hand-fed, where operator feeds by means of a hand-operated power device.
3. Power-driven operations, sensitive hand-fed, where pressure for feeding operates directly against operator.

For operations on simple machines such as printing presses, cartridge drawing machines, machine tools, and the like, Merrick uses the following allowances as a percentage of time of operation:

Power-driven, power-fed	5%
Power-driven, hand-fed	20%
Power-driven, sensitive hand-fed	25%

These allowances during long practice have proved ample in shops where the machinery is properly cared for and maintained to run as closely as possible at standardized speeds.[5]

Instruction card, Form 31, shows how these allowances are applied in determining a standard time.

Instruction card, Form 28, shows how Lichtner allowances are applied.

INSTRUCTION CARDS.—Instruction cards for employees record standard method of performance after this is adopted. They give all information which bears on the operation with reference to tools, machines, equipment, and material. Instructions describe quality standard and standards for each condition if there is more than one. Frequently a sketch of piece to be produced or of special tools is part of the instruction card. These cards are widely used in industry and are the accepted means for making permanent

[5] *Management Engineering*, February, 1922, pp. 131–132.

results of time studies. Form 28 shows a specimen instruction card for a small wooden object, a plug bait body. Form 28 shows another instruction card for a machine operation in making a man's sack coat.

Name of Part: Plug bait body. *Material:* Red cedar—Benchwork.
Operation: Sandpaper, Operation No. 10.

Item	Detailed Instructions	Preparation Time, Min.	Unit Time
1	Get box of work and place on bench, 0.50 x 1/500.	.001	
2	Pick up and hold piece in hand, apply sandpaper block. .	....	.031
3	Shape front end with No. 1 paper..................	....	.185
4	Turn piece end for end and apply block..............	....	.020
5	Shape rear end with No. 1 paper..................	....	.109
6	Remove piece to box..............................	....	.010
7	Count pieces 2.5 x 1/500.........................	.005	
8	Change for a new piece of sandpaper .08 x 1/10.........	.008	
9	Cut up pieces of sandpaper 5.0 x 1/100 x 1/10..........	.005	
	Total preparation time..........................	0.019	
	Total selected time.............................	....	0.355
	0.355 handling time—100 per cent curve at 44 per cent.	....	.156
	Working cycle...................................	....	0.591
	0.019 preparation time plus 25 per cent.............	....	.024
			0.615
	Allowance for washing, 1 2/3 per cent................	....	.005
	Time for one piece..............................	....	0.620
	Hourly production—97 pieces		
	Base rate—$0.33 rate per hundred, $0.455		

FORM 31. Specimen Instruction Card
(Taken from *Management Engineering*, February, 1922.)

Description Accompanying Instruction Card

Name of Part.—Plug bait body. A small oval shape piece about 2 in. by ¾ in. by ¾ in. thick.

Material.—Red cedar.

Operation.—Sandpaper (smooth preparatory for a preservative preparation).

Remarks.—This is a quantity production job of a simple kind, done by more or less unskilled labor, nevertheless the workers become very proficient, and therefore the rates should be based on accurately determined elementary operations and carefully constructed task times.

Allowances.—For this job there are three kinds of allowances to be considered:

1. Allowances for the selected cycle time, namely, the working cycle, consisting of items 2 to 6, inclusive, totaling 0.355 min. Allowances for such work are described under "Fatigue and Variation" allowance; and as it is all handling time, it is read from the 100% curve. By reading up, opposite 0.355 min. to the 100% handling-time curve and then over to the left, the percentage is found to be 44%.

2. Unavoidable delays. Preparation time, items 1, 7, 8, and 9, total 0.019 min. These kinds of elementary operations are classified under "Unavoidable Delays," and therefore 25% of this total amount is added as an allowance.

3. The allowance for washing, $1\frac{2}{3}\%$, is classed as "Personal Delays." In the plant in which this instruction card is used, the workers are allowed a certain amount of time just before the noon and the quitting-time day whistle, to wash up and get ready to leave when the whistle blows. This $1\frac{2}{3}\%$ is the percentage that these wash-up period times are of the total day's work period. In taking account of it, this percentage of $1\frac{2}{3}\%$ of the task time 0.615 is added to it, bringing it up to 0.62 min.

RATE-SETTING.—Rates broadly cover unit for wage payment, that is, rate per hour, per day, or per piece, and wage payment plan used in paying wage earnings. As wage payment plan is usually fixed for a long period of time, the term **rate on the operation** is applied narrowly to the wage rate for a particular worker, or to the piece rate for a particular part.

Time study results are used in determining unit or standard time for an operation or job. Instruction cards, Forms 28, 31, show at bottom time per piece, number of pieces per hour, number per 9 hours, base rate, and rate per 100 pieces.

Many rates are set from old time study data, which have been worked up to give unit times. This situation is particularly true with machine-shop work. Merrick has developed a standard division of machining operations which is particularly useful in arranging time study data for general use.

Wage-Payment Plans

HISTORICAL.—Development of **wage-payment plans** in industry began about 1890, being forced upon industrial managers by labor unrest and controversy. Up to that time day-work, piece-work, and contract-work were practically the only forms in use in American factories.

Threefold aim in developing and installing other and newer devices of wage-payment methods is: to increase production; to increase compensation of workers; to decrease unit costs. Increase in production strengthens manufacturing firm; increase in compensation aids in securing superior workers; basis of decreased costs is that as worker earns more per hour, wage cost of employer is lessened.

Period 1880 to 1890 brought many strikes and labor disputes. In 1891, just at close of this period, F. A. Halsey[6] presented his **premium plan** of wage payment in a paper read before the American Society of Mechanical Engineers. In 1895, Frederick W. Taylor,[7] before the same audience, presented his **differential wage-payment plan.** These two pioneer plans have been developed and modified and another type has been added, known as the **bonus plan.**

TWELVE PLANS DESCRIBED.—C. W. Lytle[8] has compiled a comparative table and plotted a comparative diagram of twelve plans, including day-work and piece-work. For each plan, Table 2 gives name of plan, principle involved, its method of application, some of its results, and a statement as to its advantages and disadvantages.

Some of these plans are modifications of others, but the difference is worth noticing. Other variations and modifications are easily possible, thus rendering this particular group of plans sufficiently flexible to meet practically any condition. They include time-payment or day-wage, piece-work, differential piece-work, and multiple piece-rate plans, five bonus plans, and three premium plans. Long-term profit-sharing and contract plans are

[6] Transactions of A. S. M. E., 1891.
[7] Transactions of A. S. M. E., 1895.
[8] *Management Engineering*, May, 1922, p. 324.

Table 2. Comparison of Standard Wage-Payment Plans

Name of Plan	Algebraic Expression for Wages Earned (See Key to Symbols)	Additional Explanation	What Can Be Expected Re. the Cost per Piece Produced	Disadvantages	Advantages
1. Time Payment or Day Wage	$H_a R_h$. Most other methods give way to this when things break down.	$H_a R_h$ for part days. Often considered essential for best quality of workmanship. Of itself, however, there is little security for even quality.	Varying from day to day, but usually high.	Unfair alike to those below and above average in any operation unless R_h is individually and carefully set. Production records alone are poor checks on performance because they seldom describe all variables involved. Daily comparison with the "lead" worker in an operation is safer, but causes ill feeling. Likely to bring out the worst, rather than the best, in employees.	Figured readily from time cards. No complaints from employees because of delays and tie-ups. Can be calculated ahead definitely by the most unschooled employee. Easy to change as other markets go up or down.
2. Straight Piece-work	$N_p R_p$	This is frequently combined with a day guaranty. In so doing much of the value may be lost. (Manchester Plan.) There is no reason, however, why it cannot be combined with it successfully as a temporary expedient.	Constant and fairly low if properly set and if lowest producers are weeded out.	If rates are cut, soldiering of the worst kind will prevail. If not, employees will range from 20 per cent to 150 per cent of a fair, production, the former not justifying the floor space they occupy, and the latter overdriving both themselves and their foremen. Discouraging rather than developing to many while they are learning to be steady producers.	Earning tied up directly with production so that ambitious employees have unlimited incentive to release their reserve capacities. Employees take active interest in having everything well managed.
3. Halsey Premium	$\frac{R_h(3H_a + H_s)}{4}$ or $R_h\frac{(H_a + H_s)}{2}$ coming from the form— $H_a R_h + \frac{(H_s - H_a)R_h}{4\ (\text{or } 2)}$	$H_a R_h$ guaranteed up to standard. Optional with each employee. Any fraction may be arbitrarily adopted from ¼ to ½.	Not dependable, and thus much higher in practice than might be expected.	Lax standards and low incentives for the higher productions. Gives occasion for soldiering on hard jobs and spurting on others.	No preliminary studies involved, therefore easy to introduce where day wage has existed. Presenting it as a proposition to save time rather than to increase production is slightly better psychology from employee's viewpoint.

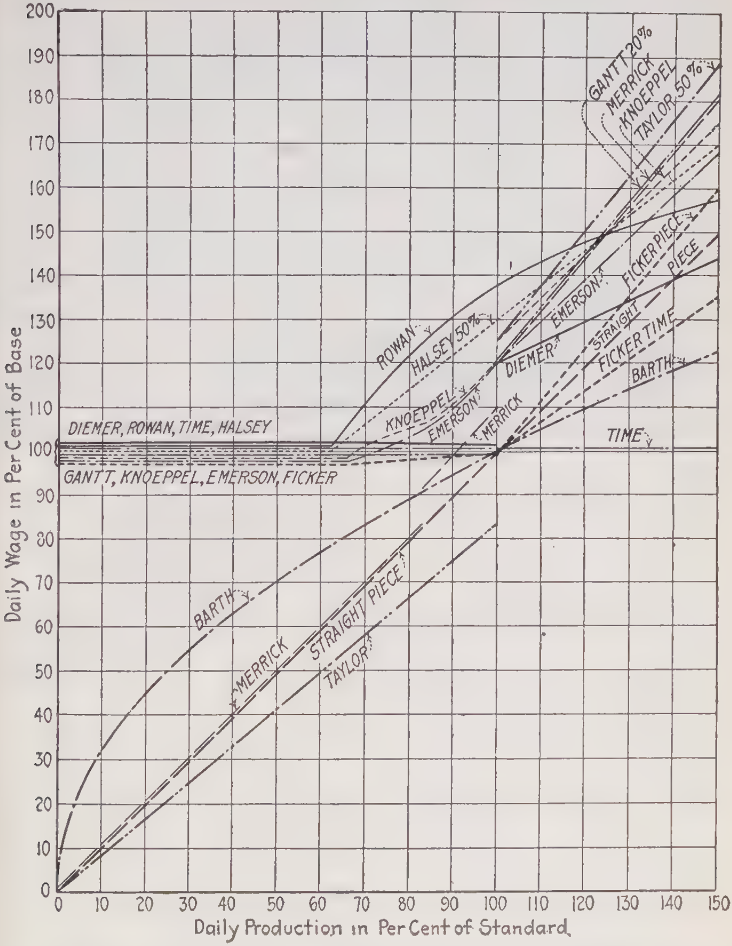
4. Rowan Premium	$H_a R_b + \left[\frac{(H_s - H_a) R_b}{H_s R_b}\right] H_a R_b$ Or figuring from the theoretical maximum backwards, $2 H_a R_b - \frac{H_a}{H_s} (H_a R_b)$ which reduces to $H_a R_b \left[2 - \frac{H_a}{H_s}\right]$	Same as above $\frac{(H_s - H_a)}{H_s R_b} R_b$ $= H_a R_b - \frac{H_a R_b}{H_s R_b}$ As H_a becomes smaller, $H_a R_b$ approaches zero as a limit. Therefore, the fraction becomes unity and the theoretical maximum earning is seen to be—2 $H_a R_b$. (The 200 per cent wage line is the asymptote of this curve.)	Like the above, but slightly higher up to the point of twice its standard production.	Little better than day wage after double its standard is reached, and otherwise like the above. Too complicated in first form and too obscure in second.	Slightly better incentive than the Halsey plan up to double its standard. Certainty that the employer will never have to pay beyond the double day wage.
5. Barth Premium	$\sqrt{H_s H_a} \times R_b$	Figured by use of a simple slide rule. When $H_a = H_s$ it is equivalent to standard day wage.	Lower than day wage, but not much effective in reducing the burden.	Very poor incentive for the higher productions. Too abstract in its form to be trusted by typical employees.	Excellent for beginners if charted out in detail. One fairly simple formula for all stages of production.
6. Taylor Differential Piecework	$N_p (R_p)^a$ up to standard $N_p (R_p)^b$ beyond	$(R_p)^b$ usually equalled 1.50 $(R_p)^a$.	Low on account of great reduction of burden per unit of product.	A severe elimination of the lower grades of employees. Often discouraging to others who cannot pass the standard each day.	A strong incentive to the truly ambitious and a heavy obligation on the part of the management to do their part.
7. Gantt Task and Bonus	1.20 $H_s R_b$ or 1.50 $H_s R_b$ coming from the form $H_s R_b + 0.20$ (or 0.50) $H_s R_b$	$H_a R_b$ guaranteed up to standard. At first optional with each employee.	Low, but probably higher than the above on account of the day guaranty.	All but the most ambitious are apt to fall back frequently onto the guaranty. The use of graphic charts is quite essential to offset this.	A tactful way of adopting the "step" incentive at standard without causing any temporary loss in earning. It is actually a piece-rate in terms of time.
8. Emerson Efficiency Bonus	$(1 + B)(H_a R_b)$ or $^*R_b (H_s + 0.20 H_a)$ coming from the form $H_a R_b + (H_s - H_a) R_b \mp 0.20 H_a R_b$ * This form allows emphasis on time saved, but is only good for performance above standard. B is irregular below standard.	$\frac{H_s}{H_a} = (1 + B - 0.20)$ above standard. This fraction is the measure of performance, and each per cent has a corresponding B per cent. $H_a R_b$ guaranteed up to 66.6 per cent	Much like above.	No conspicuous demarcation at the point of standard production. Otherwise like above.	Mild enough to give opportunity for development. Good psychology in holding attention on time saved.

Table 2. Comparison of Standard Wage-Payment Plans—*Continued*

Name of Plan	Algebraic Expression for Wages Earned (See Key to Symbols)	Additional Explanation	What Can Be Expected Re. the Cost per Piece Produced	Disadvantages	Advantages
9. Knoeppel Bonus	Like above with 0.25 coefficient in place of 0.20.	$\frac{H_s}{H_a} = (1 + B - 0.25)$ *above* standard. Same as above except the scale is more liberal between 67 and 95 per cent, and has a 5 per cent step at standard.	Low, perhaps between Gantt and Emerson.	None, beyond the danger in any day guaranty.	Same as above, plus a conspicuous step at standard. Claimed to be very flexible in its application.
10. Merrick, a Multiple Piece-Rate	$N_p\ (R_p)^a$ up to 5/6 standard $N_p\ (R_p)^b$ up to standard $N_p\ (R_p)^c$ beyond standard	Can be made even more effective by dividing the steps so as to have the upper one larger than the lower. For instance, instead of 10-10, say 8-12.	Very low.	A little complicated to install and difficult for employees to keep track of. A circular tabulation or an arithmetic slide rule can be made so that the pay-roll figuring is fairly simple, otherwise additional clerical work is involved.	The same kind of effect as the Taylor Differential, but in a more moderate degree. The preliminary or partial step meets the need of struggling employees without doing too much to guard their financial safety.
11. Diemer Combined Bonus and Premium	$(0.70\ H_a + 0.50\ H_s)\ R_h$ coming from the form $H_a\ R_h + \frac{0.20\ H_a\ R_h + (H_s - H_a)\ R_h}{2}$	$H_a\ R_h$ guaranteed up to standard	Low if it succeeds in keeping the majority away from the day guaranty.	About an average among the wage incentives, therefore not particularly strong in its effect.	A very safe and easy plan to install if conditions are not mature in their standardization
12. Ficker (a sharing of time *and burden* saved)	$R_h\ H_a + \frac{1}{2}\ (H_s - H_a)\ (R_m + R_h)$ in terms of time basis. $N_p\ R_p + \frac{R_m}{[illegible]}\ (H_s - H_a)$ in terms of piece basis	$H_a\ R_h$ guaranteed up to standard. When $H_a = H_s$ the whole expression reduces to day wage in the one case, and to piecework in the other.	For employees above standard, very low. For others, high.	Too complicated for all to figure readily. Considerable clerical work required. Like the Gantt plan, the incentive is remote from the reach of mediocre producers.	It would seem to remove every suspicion imaginable on the part of the employee. The one is more generous than a piece-rate, but less so than most of the others, as it has neither step nor bonus below standard.

(From article by C. W. Lytle, in *Management Engineering*, May, 1922)

omitted, for they lack definite connection with the daily task. The daily wage rate plan is included to assist in making comparisons.



Form 32. Graphic Comparison of Twelve Wage-Payment Plans
(From article by C. W. Lytle, *Management Engineering*, May, 1922)

Mathematical expressions for all these plans as given in Table 2 have been plotted on chart of Form 32, and show similarities and divergencies. For these curves the Halsey and Rowan production standards were taken at

62½% of the other standard, because these plans are designed to operate on existing conditions, that is, without being preceded by a determination of standards through time or motion studies. At 125% standard production, five of the curves coincide at a point midway between the Taylor and Emerson curves. In fact, every curve except Barth's may be said to have more than on point in common with at least one other. It should be noted further that the consensus of opinion, as indicated by these curves, gives workers 150% of base wage for production of 125% of standard.

If an average of all these plans is desired, it is well approximated by taking the Barth plan to standard and the Diemer plan beyond. But slope of the Diemer plan does not correspond with what may be considered the consensus of opinion as given by the five curves which have a common point.

Reason for **diversity** of plans may be found in the fact that they were evolved by practical experimenting. Theoretical acceptability of the differential piece-rate idea is that it comes nearest to following probable position of the fatigue curve. An even curve with an increasing slope may be out of the question mathematically, but a series of a few differential steps, such as Merrick established, provides a practical method. Advantage of such a method is not only for the employee but is consistent with employer's needs and circumstances. This is so because individual increases in production usually come without much increase in the average overhead burden. When latter is divided by a greater number of units produced, a lower cost per unit results. The Ficker plan, based on piece-rate, is an attempt in this direction. It practically does not accomplish the aim so well as the Merrick plan.

Key to the symbols is as follows:

Np—Number of pieces produced.
Rp—Rate per piece in dollars.
Rh—Rate per hour in dollars.
Rm—Machine-rate dollars.
Hd—Hours per full day.
Ha—Hours actual.
Hs—Hours standard for **Np**.
B—Bonus in per cent.

SIX EXTENSIVELY USED PLANS.—Form 33 presents a **graphic comparison** of six of the more extensively used wage-payment plans, including day-rate, piece-rate, Halsey premium, Rowan premium, Merrick bonus, and Gantt task-and-bonus. This plotting was presented by Harrington Emerson,[9] who comments briefly on each plan of piece-rate:

The experience of centuries shows that when there is neither measure nor incentive, production per hour drops at least ⅓ . . . . The **Halsey plan** does not usually rest on accurate determination of the standard. It takes the worker as he is, and pays a reward for improvement irrespective of starting point. If times are accurately determined under the Halsey plan, as they could be, then the objection is that Halsey takes so much of the gain for the employer, two-thirds, that it proves neither fair nor attractive for the worker.

The **Gantt plan** is exceedingly good. It sets up a target, and unless the bull's-eye is hit there is no count. The objection to the Gantt plan is the difficulty of bringing the worker up to standard. At 99% efficiency he is still on hourly rate. If he reaches 100% he suddenly receives a bonus of 20%. Above 100%, the Gantt plan becomes a piece-rate plan. It is difficult to combine day rates and bonused rates in accounting.

The **Rowan plan** is British, it is based on the fear that the good worker might earn too much. The exceptionally good worker would earn far less than by any other plan except hourly rate. An employer using the Rowan plan would lose all his best workers if any other modern plan were used in competitive shops.

The **Emerson plan,** giving the same standard costs for standard performance as the other plans, has certain practical advantages.

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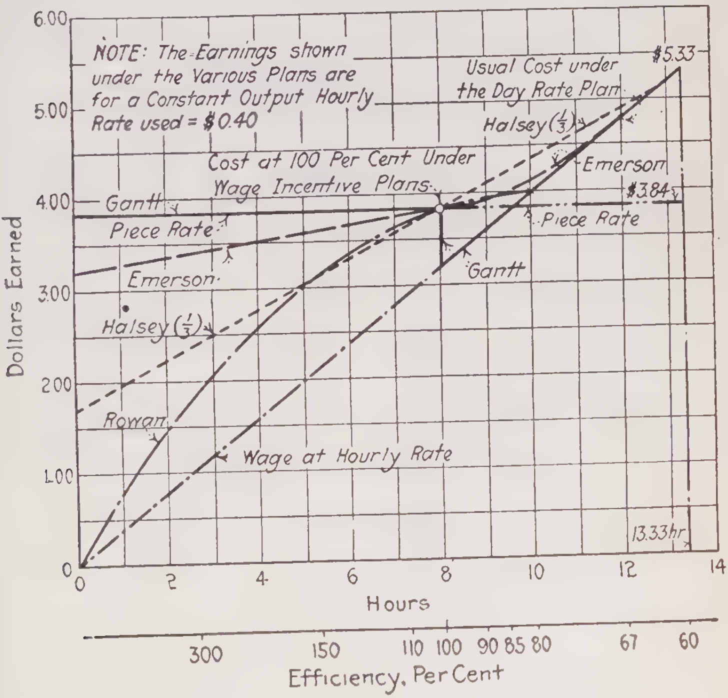
[9] *Management Engineering*, June, 1922, p. 370.

1. It is easy and attractive for the beginner.
2. The bonus to beginners is so slight as not to be a burden, yet is an evidence of good faith.
3. It is easily combined with part hourly times.
4. A man is measured and rewarded not by the separate job, but by all his work over a period. His efficiency is determined by dividing the sum of the standard times by the sum of the actual times.
5. It can be applied to a group of men working at different rates and for different times.
6. Above standard it pays a man his full regular hourly rate for all time saved, and pays in addition 20% bonus above wages for time worked.



FORM 33. Graphic Comparison of Six Wage-Payment Plans
(From article by Harrington Emerson, *Management Engineering*, June, 1922)

A variation of the Emerson bonus plan has been developed by W. K. Wennerlund. He begins at 66.7% efficiency, and pays 20% at 100% efficiency After that he pays, as Gantt does, the piece-rate price.

SECTION 28

PROFESSIONAL

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SECTION 28

PROFESSIONAL

HISTORY OF ACCOUNTING.—Records show that the partnership existed in **Babylonia** as early as 2285 to 2242 B.C. The relationship of principal and agent was known, drafts and checks were used, and legal decisions were recorded covering contracts, conveyances by deed, bonds, receipts, inventories, sales, and accounts of all sorts. The records of banking and money-lending firms of Babylon and Nippur have been preserved. These were kept on **sun-baked tablets** or **slabs,** ½ x ¾ inches in size, written on front, back, and sometimes on the edges. Some of the records were much larger, however. Records of ownership of property were carefully prepared by the state for tax purposes. These were kept by a class of persons known as **scribes.**

In **Egypt** accounts were kept on **papyrus.** The state kept carefully made records of revenues and disbursements. Taxes were usually payable in **kind.** For the storing of such receipts **treasure houses** were kept. Upon entering, the taxpayer stopped to give record of his payment, also where he made formal delivery. This afforded duplicate records valuable for audit purposes.

In **Greece** public officials were required to give strict accounting for all transactions. Upon giving up his office each officer was required to render an accounting of the funds entrusted to him. To secure publicity the accounting was engraved on stone and exposed to public view. The Greeks developed a primitive clearing house system.

In **early Rome** the father kept the family accounts in a blotter or memorandum record. Each month he transferred these to a register. If entry was made therein with consent of the debtor it served as sufficient basis for legal suit or civil obligation. Bankers used a similar record and also a book in which customers' accounts were set up. Customers were debited on one page and credited on the other. Balances were figured periodically. The balance might be demanded by the customer or be continued. Cash payments were customary, but checks were used by the wealthy.

In governmental accounting the management and disbursement of funds were entrusted to different officers. The official in charge of disbursements issued orders on the treasurer, thus providing him with a voucher for disbursements made.

In early Roman times provincial and district treasuries were established which were required to account strictly to the central treasury. A **budget** was employed as a basis for tax levies. It showed the requirements of the army, imperial household, etc. Under the later empire this system of levying and collecting taxes became highly organized.

In **England** the earliest system of accounts was that of the exchequer established about the year 1100. It was based on the **Domesday Book.** This was a record of all taxable estates in the country. From it the treasurer's

great roll, or **pipe roll,** was compiled. Each sheriff was entrusted with the collection of his portion, and rendered account twice yearly. At the first accounting he received the half of a tally stick having notches showing amounts. The treasurer retained the other half. At the second accounting the sheriff turned in his tally stick to evidence payments made. It was then compared with the half retained by the treasurer to see that no alterations had been made.

Double-entry accounting was first employed in Italy. Some rather elaborate systems of bookkeeping had been established as early as 1350. In 1340 a double-entry ledger was in use in Genoa. In these early systems Roman numerals were quite generally used because the courts accepted as evidence only books in which this system of notation was used. As a rule, books were balanced infrequently. In 1494 Luca Paciolo, monk and mathematician, published a book entitled "Everything about Arithmetic, Geometry and Proportion" which has been translated into English by J. B. Geijsbeek under the title "Ancient Double-Entry Bookkeeping." In Paciolo's book appears a treatise on bookkeeping, this division being entitled "Reckonings and Writings." Paciolo says the object of bookkeeping is to furnish information regarding assets and liabilities, and bases his opening entries on a statement of assets and liabilities. His system necessitates the use of three books—a memorial, a journal, and a *quaderno*.

The **memorial** is a daybook. Moneys received and paid out were entered here, and later, because of the chaotic condition of currencies, were reduced to a common denominator of value and transferred to the **journal,** in which formal debit and credit entries were made. From the journal, footings were made to the **ledger.** In the ledger the **folio index** always referred to the contra ledger account, never to the journal. Since merchandise transactions were usually of the single venture type, each transaction was charged with its expenses and credited with its income. The balance was transferred to Profit and Loss.

A **textbook** was published by Taglienti in 1525. In 1543 an English translation of Paciolo was brought out. In 1635 Dafforne, an accountant, published the "Merchant's Mirrour," a treatise on accounting which passed through several editions. In 1777 Hamilton published a book presenting systems for shopkeepers, tradesmen, land stewards, and farmers. In it he classified accounts as personal, real and fictitious. His books are a waste book, journal, and ledger. He closes the ledger by a journal entry. In the balance sheet he places assets on the left and liabilities on the right. His ledger contains an inner column for foreign moneys. He gives forms for various books such as suspense book for bad debts, cash book, merchandise charges, petty cash, postage ledger, bill books, and balance ledger for customers.

The **ledger account** was at first narrative in form, consisting of a running statement of charges and credits, one underneath the other on the same page. Classification as now understood was known but little or not at all. In some Egyptian accounts receipts were grouped together followed by disbursements, the daily balance being carried forward. A separate money column developed slowly. An English household account shows a narrative of receipts and disbursements and a money total column to the right free from narrative. This form was usual up to the seventeenth century, the first entry being the opening balance, followed by receipts, and these in turn by disbursements.

During the latter part of the fifteenth century the charge-discharge form

was employed by the Lord High Treasurer of Scotland. It opened with, "I charge myself with," which was followed by the itemized estate entrusted to him and by all revenues. It closed with, "I discharge myself with," which was followed by a statement of moneys lawfully expended and, at the end, uncollected revenue. Several pages were footed but not carried forward page by page. A recapitulation was made at the close arriving at net moneys to be accounted for. It is thought the double account form as now known came into use in Italy about the thirteenth century, and reached England by way of Holland.

ACCOUNTANTS' ORGANIZATIONS.—Organizations of accountants date back only about 50 years, although individuals have been devoting their entire time to accounting practice for a much longer time. The first **accountant's report** of which record exists was made in 1721, by an accountant who investigated the South Sea Company with reference to its exploitation. In 1799 the names of eleven firms of accountants were listed in a London directory. Rapid expansion of manufacture and transportation in the nineteenth century has caused scientifically trained men to enter the accounting profession. In 1854, in Edinburgh, the Society of Accountants was incorporated. In 1870 the Institute of Accountants was founded in London, but was not chartered until 1880, when it was given exclusive right to use of the letters F. C. A. and A. C. A., signifying respectively, Fellow and Associate of the Institute of Chartered Accountants. A students' association was organized in connection with the Institute. Members of this association are admitted to the Institute after passing prescribed examinations. The passage of legislation relative to companies has tended to create a large following of the profession in England.

In 1887 the American Association of Public Accountants was organized in the United States. It was modeled in part after the English societies. In 1896 the New York legislature passed an act authorizing the regents of the state university to grant, upon examination, the privilege of using the letters C. P. A. Many other states followed suit. In 1905 the American Association of Public Accountants took over a federation of the various states. In 1916 the American Association of Public Accountants amalgamated with the Institute of Accountants in the United States, organized under federal charter, and now constituting the national organization. In 1917 the name was changed to American Institute of Accountants. The Institute's membership consists of **members** and **associates.** Admission is based on examination. Concerning growth of the profession in the United States, Kester says:[1]

> Contrary to the history of accountancy in England, there has been little legislation here to foster the growth of the profession until somewhat recently. The corporation and income tax laws have increased the claims upon the accountant's professional services, and some state laws have tended in the same direction. The growing appreciation by the banks of the value of the certificate of the public accountant when attached to a borrower's statement of financial condition; the demand for skilled accountants in public utilities work; the value of the training to a public office-holder; the favorable attitude of the membership of the Federal Reserve Board and Federal Trade Commission in the value of correct accounting methods; and more and more the increasing opportunities for the exercise of abilities of the highest order in the private field—all these things make the profession one of the most attractive to the young man of today.

THE AMERICAN INSTITUTE OF ACCOUNTANTS.—The organization of the Institute is explained in the constitution and by-laws printed

[1] Accounting, Theory and Practice, Vol. I, p. 11.

later in this section. As set forth in Article I of the constitution, the purpose of the Institute is to further the interests of the profession by maintaining certain educational and ethical standards and encouraging cordial intercourse among accountants. Article II sets forth the qualifications of members and associates. Voting power in the institute is vested exclusively in the members, although associates may attend meetings. Article III explains the organization of the **council,** or governing body. It consists of 35 members in practice, also a president, two vice-presidents, and a treasurer. The council elects a **secretary** who acts as executive officer under direction of the council. Article IV names the 12 committees of the Institute. Article V sets forth regulations for holding examinations. The board of examiners consists of 9 members elected for terms of 3 years. Examinations are held semiannually. Article VI sets forth the manner of amending the constitution.

The *Journal of Accountancy* is the **official organ** of the American Institute of Accountants.

The headquarters of the Institute are at 135 Cedar Street, New York City. In 1917 the president of the Institute reported the offer on the part of certain individuals to start an endowment fund to provide permanent headquarters. A campaign was started to raise $150,000. The project has resulted in the establishment, at the above address, of a library and reading room with facilities for efficient work, also a bureau of information. Members take advantage of the opportunity to secure advice on practical questions. An advisory committee assists in making replies to queries sent in. A statistical department is also operated.

The Institute has published several scientific works, among them being the *Accountant's Index.*

In 1919 a small catalog of important books and pamphlets was published by the library.

The **Committee on Professional Ethics** has adopted certain **rules of professional conduct** printed elsewhere in this section. In addition to its work of formulating rules of correct ethical conduct, this committee hears complaints. It reports violations of by-laws and rules, as well as any form of professional misconduct, to the executive committee. One instance of such misconduct is the certifying to misstatements of fact in an audit report. Circularizing and other forms of advertising by professional accountants have come prominently before the committee. The committee has attempted to differentiate between good and bad circularizing, but, in general, discourages the practice. In one report the committee says: "The difference is one of good taste and decency and is intuitively recognized by one who has good taste and a decent regard for his profession." See "Rules of Professional Conduct" printed elsewhere in this section. For additional information on professional ethics consult the various year books of the Institute, and, in particular, pp. 70-76 of the 1921 year book.

The **Committee on Education** works for standardization and betterment of educational courses and professional examinations. The adoption of a uniform examination has met with considerable approval, as is shown by the willingness of many state boards to co-operate by using the Institute's questions and accepting their grading of papers. The committee takes an interest in business schools throughout the country and attempts to have them establish courses which will meet the standard set by the Institute examinations. An extensive report on "Departments of Commerce and Accounts in American Universities and Colleges," giving the status of each

regarding establishment, location, endowment, preliminary educational requirements, length of course, degree conferred, required and elective courses for day and night students, C. P. A. preparation, tuition, enrollment, number of teachers, etc., is printed in the 1917 year book of the Institute, pp. 204-216.

The **Committee on Federal Legislation** has occupied itself with taxation legislation and other matters coming under notice of the federal authorities. An important contribution has been the promulgation of a **program of audit procedure,** prepared at the request and with the approval of the Federal Trade Commission, and published by the Federal Reserve Board. It was published in the Federal Reserve Bulletin of April, 1917, and reprinted in pamphlet form. It is also found in Appendix A of Montgomery's "Auditing, Theory and Practice," Vol. I.

The **Committee on State Legislation** is concerned chiefly with the enactment of state C. P. A. laws. Some laws are disapproved by this committee on the ground that they are not designed to promote the best interests of the profession. The committee makes its recommendations to the council. The committee has recommended recognition on the part of the Institute of certificates issued under state laws where satisfactory arrangements regarding examination requirements have been made.

CONSTITUTION OF AMERICAN INSTITUTE OF ACCOUNTANTS

[As amended to September, 1922]

Article I

Section 1. The name of this organization shall be the American Institute of Accountants. Its objects shall be to unite the accountancy profession of the United States; to promote and maintain high professional and moral standards; to safeguard the interests of public accountants; to advance the science of accountancy; to develop and improve accountancy education; to provide for the examination of candidates for membership, and to encourage cordial intercourse among accountants practising in the United States of America.

Article II

Section 1. The institute shall consist of *members* and *associates,* who shall be further classified as members in practice and associates in practice, members not in practice and associates not in practice.

All questions arising in regard to classification of members shall be determined by the council.

Sec. 2. Members shall consist of the following:

(a) Fellows of the American Association of Public Accountants who shall be such at September 19, 1916.

(b) Associates who shall have been in practice on their own account or in the employ of a practising public accountant for five years next preceding the date of their application and shall be recommended by the board of examiners after examination and elected by the council The determination of who shall be considered as practising public accountants shall be made in all cases by the board of examiners.

(c) Accountants who shall present evidence of preliminary education satisfactory to the board of examiners, who shall have been in practice on their own account or in the employ of a practising public accountant for not less than five years immediately preceding the date of their application, who shall be recommended by the board of examiners after examination and elected by the council.

(d) Accountants in practice who shall present evidence of preliminary education satisfactory to the board of examiners, who shall have been in practice on their own account or in the employ of a practising accountant for not less than ten years, one year of which shall have immediately preceded date of application, who shall be recommended by the board of examiners after examination and elected by the council.

Sec. 3. Associates shall consist of the following:

(a) Associate members of the American Association of Public Accountants at September 19, 1916; or

(b) Persons who shall be not less than twenty-one (21) years of age and present evidence of preliminary education satisfactory to the board of examiners; and

(c) Shall have satisfactory training and experience in public accounting.

The last-named qualification may consist of:

(1) Possession of a certificate of graduation from an accounting school recognized by the examining board and a certified public accountant certificate of a standard recognized by the examining board or instead of a certified public accountant certificate employment for not less than two years upon the accounting staff of a public accountant (students not completing the full course at an accounting school shall be given credit by computing the number of years of study satisfactorily completed as being equal to one-half the same number of years employed in the office of a public accountant); or

(2) Employment for not less than two years upon the accounting staff of a public accountant and possession of a certified public accountant certificate of a standard recognized by the examining board; or

(3) Not less than four years' experience in public accounting work either upon his own account or in the office of a public accountant by a person not holding a certified public accountant certificate of a standard recognized by the examining board; or

(4) Possession of an accountant's certificate issued under the law of a foreign government of a grade accepted by unanimous action of the board of examiners and one year's satisfactory experience in practice in the United States of America; or

(5) In the discretion of the board of examiners exercised in each case, not less than three years' experience in teaching accountancy subjects in a school of accountancy recognized by the board of examiners.

(6) In addition to the foregoing qualifications, candidates for associate membership shall submit to examination by the board of examiners and, upon recommendation of that board, may be elected by the council.

Sec. 4. Voting power in the institute shall be vested exclusively in the members. Associates shall not have a vote but may attend all meetings of the institute and have the privilege of the floor in the discretion of the chair or of the meeting then in session.

Sec. 5. After October 31, 1916, no applicant shall be admitted as a member or an associate and no associate shall be advanced to membership without examination by the board of examiners and election by the council.

Article III

Section 1. The governing body of the institute shall be a council consisting of thirty-five members in practice (not more than six of whom shall be residents of the same state) and the following officers:

A president (the same person shall not be elected for more than two years in succession).

Two vice-presidents (both of whom shall not be residents of the same state).

A treasurer.

The foregoing officers and members of the council shall be members in practice and shall be elected at the annual meeting and shall hold office until their successors shall have been elected and installed.

Sec. 2. The term of office of the officers shall be one year and the term of office of the other thirty-five members of the council shall be five years, except that of the members first elected seven shall be elected for a term of one year, seven for a term of two years, seven for a term of three years, seven for a term of four years and seven for a term of five years, and annually thereafter seven members shall be elected for terms of five years, except in the case of vacancies in the council, which shall be filled by election by the institute for the unexpired terms.

Sec. 3. The council shall elect a secretary of the institute who shall also act as an executive officer under the direction of the council. The secretary may be chosen from without the membership of the institute but he shall have the privilege of the floor at meetings of the institute, the council and the executive committee.

Sec. 4. The council shall also be empowered to elect or appoint such other agents or employees as may be necessary for the proper conduct of the affairs of the institute.

Sec. 5. In the event of a vacancy or vacancies occurring in the membership of council between meetings of the institute the council shall be empowered to elect a member or members of the institute to fill, until the next annual meeting, the vacancy or vacancies so

occurring. Such election may take place at any regular or special meeting of the council, or in lieu of a meeting nominations may be called for by the president and the names of the nominees may be submitted to the membership of council for election by mail ballot. A majority vote of the council shall elect.

Article IV—Committees

SECTION 1. There shall be twelve regular standing committees, namely:

EXECUTIVE—Elected by the council and consisting of five members of the council with the president and treasurer of the institute ex-officio.

PROFESSIONAL ETHICS—Elected by the council and consisting of five members of the council not members of the executive committee.

ARBITRATION.

BUDGET AND FINANCE.

CONSTITUTION AND BY-LAWS.

EDUCATION.

ETHICAL PUBLICITY.

FEDERAL LEGISLATION.

MEETINGS.

NOMINATIONS.

PUBLICATION.

STATE LEGISLATION.

The committee on nominations shall consist of seven members in practice. At the meeting of the council held on the Monday preceding the annual meeting of the institute or any adjournment thereof the council shall elect from among its number, other than officers or those whose terms expire within one year, two members of the council to serve on the committee on nominations. At the annual meeting of the institute the members present shall elect from among the members in practice five members of the committee on nominations, other than officers or members of the council. This committee shall make nominations for officers and members of the council. Such committee shall serve for a period of one year and until its successors are elected and qualify and shall make such nominations as shall be required at least sixty days prior to the annual meeting for the following year. Such nominations shall be sent to the members at least thirty days prior to the annual meeting.

Any ten members of the institite may submit independent nominations provided that such nominations be filed with the secretary at least twenty days prior to the annual meeting, such independent nominations to be sent to the membership at least ten days prior to the annual meeting. Nominations for officers and members of the council may be made from the floor at the time of the annual meeting only by the consent of the majority of the members present in person.

SEC. 2. All committees except as provided above shall be appointed by the president and shall consist of a chairman and two other members who shall be members of the institute.

SEC. 3. A majority of each committee shall constitute a quorum for the transaction of business. In lieu of a meeting of a committee the chairman may submit any question to its own members for vote by correspondence, and any action approved in writing by not less than two-thirds of the whole committee shall be declared an act of the committee.

SEC. 4. The president shall be ex-officio a member of all committees.

Article V—Chapters

Upon application to the council of the institute and subject to its approval there may be organized in any state, by members resident or having a place of business therein, a subsidiary body to be known as a chapter of the American Institute of Accountants under such rules and regulations as the council of the institute may prescribe.

Article VI—Examinations

SECTION 1. The council at the first meeting thereof after the annual meeting of the institute shall elect from among the members of the institute in practice a board of examiners consisting of nine members to serve for terms of three years each, except that of the examiners first elected three shall be elected for a term of one year, three for a term of two years, and three for a term of three years, and annually thereafter three examiners shall be elected for terms of three years.

Sec. 2. The board of examiners shall hold examinations annually or, if deemed expedient, semi-annually for candidates. Such examinations shall be oral or written or partly oral and partly written, and by this or such other methods as may be adopted the board of examiners shall determine the technical qualifications and the preliminary education and training of all applicants for membership before applications are submitted to the council. The examinations shall be held simultaneously in different parts of the country at such places as may be determined by the board of examiners where applicants for admittance may conveniently attend.

Sec. 3. The board of examiners shall organize by the election of a chairman and shall formuate all necessary rules and regulations for the conduct of its work and shall be empowered to appoint duly qualified examiners to prepare examination questions and to mark the grades of papers of applicants and shall charge each applicant an examination fee, which shall be applied to the payment of the expenses incident to examinations. All rules and regulations made by the board of examiners may, however, be amended, suspended or revoked by the council.

Article VII—Amendments

Amendments to the constitution or by-laws of the institute shall be made only at the annual meeting thereof and by a two-thirds vote of the members present, but before becoming effective shall be submitted for a mail vote to the entire membership of the institute, and when approved in writing by a majority thereof shall be declared by the president to be effective. All propositions to amend prepared by the committee on constitution and by-laws shall be embodied in the call for the meeting at which such amendments are to be submitted. It shall be compulsory for the secretary to embody in the call for the annual meeting any other propositions to amend of which he shall have had notice endorsed in writing by thirty or more members in good standing at least sixty days prior to the annual meeting.

BY-LAWS OF AMERICAN INSTITUTE OF ACCOUNTANTS

Article I

Duties of Officers

Section 1. It shall be the duty of the president or, in his absence, one of the vice-presidents or other members of the council designated by the council to preside at all meetings of the council and institute. He shall call meetings of the institute or the council when he deems it necessary or when requested so to do by the executive committee or upon the written request of at least five members of the council for a meeting of the council or one hundred members of the institute for a meeting of the institute. The duties of the vice-presidents and treasurer shall be those usually appertaining to such officers. The secretary, in addition to performing the usual duties of that office, shall discharge such other duties as may be imposed upon him by the council or the executive committee.

Audit

Sec. 2. The accounts of the institute shall be audited by two auditors elected at the annual meeting, who shall report at the next annual meeting. The books and accounts shall be submitted by the treasurer for audit at least one week preceding the date of the annual meeting.

Council and Committees

Sec. 3. It shall be the duty of the council to take control and management of all the property belonging to the institute, to keep a record of its proceedings and report to the institute at each annual meeting. The council shall exercise all powers requisite for the purposes of the institute.

Sec. 4. The council may, in its discretion, delegate to the executive committee all functions of the council except election of officers and members, the right to review the rules and regulations of the board of examiners, discipline of members, filling a vacancy in the executive committee and the adoption or alteration of a budget.

Sec. 5. The executive committee shall keep minutes of its proceedings and report fully to the council at each meeting thereof. It shall be the duty of the executive committee to administer the affairs of the institute, supervise the finances and exercise such other

powers as may be designated by the council. No payments except for duly authorized salaries shall be made by the treasurer without the approval of the executive committee.

SEC. 6. The office of a member of the council shall be rendered vacant by his absence from four consecutive meetings of the council.

SEC. 7. The council shall adopt an annual budget showing the money appropriated for the purposes of the institute and estimating the revenue for the ensuing year. No debts shall be contracted nor money expended otherwise than as provided in the budget without the approval of a majority of the council.

SEC. 8. The duties of each committee shall be those indicated by its title.

SEC. 9. The committee on publication shall supervise *The Journal of Accountancy*.

SEC. 10. The committee on arbitration shall sit as a committee in equity to investigate and decide disputes between members or associates of the institute or others which shall, by agreement of the parties, be submitted to the committee in due form. If the decision of the committee on arbitration, in any dispute between members or associates of the institute, be rejected by either party to the dispute, the matter shall be reported to the council, which may prefer charges against either party if it shall consider, by a two-thirds vote of members present, that the recommendation of the committee on arbitration should have been accepted.

SEC. 11. The committee on professional ethics shall have power to hear and consider any complaint preferred against a member or an associate of the institute and it may advise any one applying to it as to whether or not a submitted action or state of facts warrants a complaint; provided, however, that if the committee finds itself unable to express an opinion it is not to be taken as an endorsement of the action or state of facts. If, upon consideration of a complaint, a prima facie case is established showing a violation of any by-law or rule of conduct of the institute or conduct discreditable to a public accountant, the committee on professional ethics shall report the matter to the executive committee, which shall arrange a formal complaint and summon the member or associate involved thereby to appear in answer at the next regular or special meeting of the council.

Meetings of the Institute

SEC. 12. There shall be a regular annual meeting of the institute on the third Tuesday of September of each year. The annual meetings of 1917 and 1918 shall be held in the District of Columbia; the annual meeting of 1919 in some place in the United States of America selected by the institute at the preceding annual meeting. Thereafter all annual meetings shall be held in the District of Columbia with the exception of every third year, when meetings may be held elsewhere as determined by the institute at the meeting of the preceding year. The fiscal year of the institute shall end with the 31st day of August each year.

SEC. 13. Notice of each meeting of the institute shall be sent to each member and associate at his last known address thirty days before such meeting.

SEC. 14. Special meetings of the institute may be called as provided in article I, section 1, of these by-laws. At special meetings no other business than that for which they were called shall be transacted. The place of such meetings shall be determined by the executive committee. Notice of special meetings shall in all ways conform to the requirements of notices for regular meetings.

SEC. 15. In lieu of a special meeting of the institute, the members in meeting assembled may direct and the council by a majority vote may also direct the president to submit to the entire membership any question for a vote by correspondence and any action approved in writing by not less than a majority of the members of the institute shall be declared by the president an act of the institute and shall be so recorded in its minutes. Mail ballots shall be valid and counted only if received within sixty days after date of mailing ballot forms from the office of the institute.

Meetings of the Council

SEC. 16. Regular meetings of the council shall be held on the Thursday next after the third Tuesday in September, the second Monday in April and the Monday next preceding the third Tuesday in September in each year.

SEC. 17. Notice of each meeting of the council except the meeting on the Thursday after the third Tuesday in September shall be sent to each member at his last known address twenty-one days before such meeting. Such notice as far as practicable shall contain a statement of the business to be transacted.

Sec. 18. A transcript of the minutes of each meeting shall be forwarded to each member of the council within thirty days after each meeting.

Sec. 19. Special meetings of the council may be called as provided in article I, section 1, of these by-laws.

Sec. 20. In lieu of a special meeting of the council the president may submit any question to the council for vote by correspondence and any action approved in writing by not less than two-thirds of the whole membership of the council shall be declared by the president an act of the council and shall be recorded in the minutes of the council.

Committee Meetings

Sec. 21. All committees shall be subject to the call of their respective chairmen.

Quorum

Sec. 22. Fifty members of the institute shall constitute a quorum for the transaction of any business duly presented at any meeting of the institute.

Sec. 23. Twenty members of the council shall constitute a quorum of the council.

Article II

Section 1. Every member of the institute shall be entitled to attend all meetings of the institute and to cast a vote upon all matters brought before such meetings.

Sec. 2. Any member of the institute may be represented at regular and special meetings of the institute by another member acting as his proxy, provided, however:

(a) That no person shall act as a proxy for more than five members;

(b) That no proxy given shall confer power of substitution and that all proxies shall become null and void with the final adjournment of the meetings for which they were given.

Article III—Election of Officers

Section 1. Election shall be by ballot. A chairman and two tellers shall be appointed to receive the ballots for each officer, member of council and auditor. They shall count the ballots cast and announce the result to the presiding officer. A majority of votes shall elect.

In case of no majority on the first ballot for any one or more officers or members of council or auditors, a new ballot shall be taken at once for the particular case or cases in which there shall have been no election until an election be effected.

Article IV—Initiation Fees and Dues

Section 1. The following shall be initiation fees:

By a member on admission	$50.00
By an associate on becoming a member	25.00
By an associate on admission	25.00

Sec. 2. No initiation or admission fees shall be exacted from members and associates elected as provided in the constitution, article II, sections 2 (a) and 3 (a).

Sec. 3. The dues for each fiscal year shall include subscription to *The Journal of Accountancy* and to the year-book of the institute and shall be as follows:

By each member	$25.00
By each associate	10.00

Sec. 4. The initiation fee shall be paid when application is made. If application is rejected such fee shall be promptly returned to the applicant. All dues must be paid in advance or at the date of a member's election to membership. All dues shall be apportioned in the first instance to the end of the fiscal year. No dues shall be paid by members and associates of the institute while they are engaged in military or naval service of the United States or its allies during time of war.

Sec. 5. No member shall be entitled to vote at any meeting when his dues shall be sixty days in arrears.

Sec. 6. Upon election as member or associate each such member or associate shall be entitled to a certificate setting forth that he is a member or an associate of the institute, but no certificate shall be issued until receipt of initiation fees and dues for the current year. Certificates of membership shall be returned to the council upon termination of membership for any cause except death.

Sec. 7. Members of the institute shall be entitled to describe themselves as Members

of the American Institute of Accountants and associates as Associates of the American Institute of Accountants.

Article V

Section 1. A member or an associate failing to pay his annual dues or any subscription, assessment or other sum owing by him to the institute within five months after such debt has become due shall automatically cease to be a member or an associate of the institute.

Sec. 1 (a) No person whose membership shall have been forfeited for non-payment of dues or other sum due by him to the institute may be reinstated, but a member or an associate who shall resign while in good standing may be reinstated by a three-fourths vote of the members of the council present and voting at any regular or special meeting of the council, provided the person applying shall submit with his application for reinstatement the amount of dues and assessments, subscriptions, etc., not in any case to exceed $25.00, which would have been payable by him if he had continued in membership from the time of resignation to the date of application for reinstatement. No person shall be considered to have resigned while in good standing if at the time of his resignation he was in debt to the institute for dues or other obligation.

Sec. 2. A member or an associate renders himself liable to expulsion or suspension by the council sitting as a trial board if (a) he refuses or neglects to give effect to any decision of the institute or of the council, (b) infringes any part of the rules of the institute, (c) is convicted of a felony or misdemeanor, (d) is declared by a court of competent jurisdiction to have committed any fraud, (e) is held by the council to have been guilty of an act discreditable to the profession, or (f) is declared by any competent court to be insane or otherwise incompetent.

Article VI

Section 1. For the purpose of adjudicating charges against members or associates of the institute as provided in the foregoing articles the council shall convene as a trial board.

Sec. 2. The executive committee shall instruct the secretary to send due notice to the parties concerned at least thirty days prior to the proposed session. After hearing the evidence presented by the committee on professional ethics or other complainant and by the defense, the council may by a two-thirds vote of the members present admonish or suspend for a period of not more than two years the member or associate against whom complaint is made, or by a three-fourths vote of the members present the council may expel the member or associate against whom complaint is made. A statement of the case and the decision of the council thereon, either with or without the name of the person involved, shall be prepared by the executive committee and published in *The Journal of Accountancy*.

Sec. 3. The council sitting as a trial board may recall, rescind or modify any resolution for expulsion or suspension at a meeting similarly called and convened by a three-fourths vote of those present at such subsequent meeting within two years after date of the expulsion or suspension under consideration.

Article VII

Section 1. The rules of parliamentary procedure contained in Roberts' Rules of Order shall govern all meetings of the council and institute.

RULES OF PROFESSIONAL CONDUCT

Including amendments and additions prepared by the committee on professional ethics and approved by the council September 18, 1922

(1) A firm or partnership, all the individual members of which are members of the institute (or in part members and in part associates, provided all the members of the firm are either members or associates), may describe itself as "Members of the American Institute of Accountants," but a firm or partnership, all the individual members of which are not members of the institute (or in part members and in part associates), or an individual practising under a style denoting a partnership when in fact there be no partner or partners or a corporation or an individual or individuals practising under a style denoting a corporate organization shall not use the designation "Members (or Associates) of the American Institute of Accountants."

(2) The preparation and certification of exhibits, statements, schedules or other forms of accountancy work, containing an essential misstatement of fact or omission therefrom of

such a fact as would amount to an essential misstatement or a failure to put prospective investors on notice in respect of an essential or material fact not specifically shown in the balance-sheet itself shall be, ipso facto, cause for expulsion or for such other discipline as the council may impose upon proper presentation of proof that such misstatement was either wilful or the result of such gross negligence as to be inexcusable.

(3) No member shall allow any person to practise in his name as a public accountant who is not a member of the institute or in partnership with him or in his employ on a salary.

(4) No member shall directly or indirectly allow or agree to allow a commission, brokerage or other participation by the laity in the fees or profits of his professional work; nor shall he accept directly or indirectly from the laity any commission, brokerage or other participation for professional or commercial business turned over to others as an incident of his services to clients.

(5) No member shall engage in any business or occupation conjointly with that of a public accountant, which in the opinion of the executive committee or of the council is incompatible or inconsistent therewith.

(6) No member shall certify to any accounts, exhibits, statements, schedules or other forms of accountancy work which have not been verified entirely under the supervision of himself, a member of his firm, one of his staff, a member of this institute or a member of a similar association of good standing in foreign countries which has been approved by the council.

(7) No member shall take part in any effort to secure the enactment or amendment of any state or federal law or of any regulation of any governmental or civic body, affecting the practice of the profession, without giving immediate notice thereof to the secretary of the institute, who in turn shall at once advise the executive committee or the council.

(8) No member shall directly or indirectly solicit the clients or encroach upon the business of another member, but it is the right of any member to give proper service and advice to those asking such service or advice.

(9) For a period not exceeding two years after notice by the committee on ethical publicity no member or associate shall be permitted to distribute circulars or other instruments of publicity without the consent and approval of said committee.

(10) No member shall directly or indirectly offer employment to an employe of a fellow member without first informing said fellow member of his intent. This rule shall not be construed so as to inhibit negotiations with any one who of his own initiative or in response to public advertisement shall apply to a member for employment.

(11) No member shall render professional service, the anticipated fee for which shall be contingent upon his findings and results thereof.

(12) No member or associate of the institute shall advertise his or her professional attainments or service through the mails, in the public prints or by other written word; but any member or associate may cause to be published in the public prints or otherwise what is technically known as a card. A card is hereby defined as an advertisement of the name, title (member of American Institute of Accountants, C. P. A., or other professional affiliation or designation) and address of the advertiser without further qualifying words or letters, or in the case of announcement of change of address or personnel of firm the plain statement of the fact for the publication of which the announcement purports to be made. Cards permitted by this rule when appearing in newspapers shall not exceed two columns in width and three inches in depth; when appearing in magazines, directories and similar publications cards shall not exceed one quarter page in size. This rule shall not be construed to inhibit the proper and professional dissemination of impersonal information among a member's own clients or personal associates or the properly restricted circulation of firm bulletins containing staff personnel and professional information.

REGULATIONS FOR INSTITUTE EXAMINATIONS

[Reproduced from a pamphlet issued by the American Institute of Accountants relative to examinations.]

I. Who may become Members

Men and women who have been five years continuously engaged in public practice immediately preceding date of application, or ten years in practice not continuously, one year of which immediately precedes date of application, who are recommended by the board of examiners and elected by the council.

II. Who may become Associates

Men and women who have been four years engaged in public accounting, not necessarily continuously nor immediately preceding date of application, who are recommended by the board of examiners and elected by the council. In lieu of two of the four years the applicant may present a C. P. A. certificate of recognized standing or a certificate of graduation from an accounting school acceptable to the board of examiners, but no applicant will be admitted to examination unless he shall have had at least two years of public accounting experience.

III. Applications

(a) Application for permission to take the examinations of the Institute should be filed sixty days prior to the date of examination on forms supplied by the Institute.

(b) No departure from the constitutional requirements can be made. Applicants seeking special consideration will receive no more attention than is accorded to those applying in the proper way.

(c) Applications must contain full details of schools, colleges and universities attended and of all employment from time of leaving school. Name and address of each school and employer and dates of attendance or employment must be given. Failure to comply literally with this rule always leads to delay. The board will not consider any application lacking complete detail.

(d) If applicants are unable to appear when directed to do so, the board of examiners will give consideration to the cause of such failure to appear, and, if the excuse be considered sufficient, appearance may be postponed until a later examination. Notice of inability to attend must be sent to the board of examiners prior to examination.

(e) The Institute does not supply application blanks for state boards. All applications to state boards must be made direct.

(f) An applicant applying to both Institute and a state board must file a separate application with each body.

IV. Candidates for Certified Public Accountant Certificates in Certain States

(a) Many state boards of accountancy have entered into a plan of co-operation with the board of examiners of the American Institute of Accountants whereby the Institute supplies questions to the state boards and also agrees to grade the papers if the state boards so desire. The Institute keeps a record of all papers graded by its board of examiners.

(b) The Institute will not consent to the examination of an applicant for any state certificate outside the state to which he is applying except in the case of a bona fide resident of such state.

(c) Candidates for certified public accountant certificates in states co-operating with the Institute may simultaneously or subsequently apply for admission as associates of the American Institute of Accountants without further technical examination, provided separate applications are made to the state boards and to the Institute, and provided also that the answers submitted at examinations are forwarded to the board of examiners of the Institute for grading.

(d) State boards have been invited to appoint representatives to participate in oral examination of persons applying simultaneously for admission to the Institute and for certificates as certified public accountants in states wherein the laws permit the issuance of certificates following oral examination.

(e) The Institute does not issue certified public accountant certificates. All information in regard to state examinations and certification must be obtained from the proper authorities in the states concerned.

V. Procedure for Applicants to Institute

(a) In presenting a syllabus and bibliography the board of examiners of the American Institute of Accountants desires to impress upon prospective applicants that the examinations of the Institute are intended to demonstrate the applicant's ability to practise as a professional public accountant. The board feels that without actual accounting experience no one can logically be expected to have a sufficient practical knowledge of accounting to justify him in holding himself out to the public as a professional accountant. Accordingly, examinations are designed to demonstrate the applicant's knowledge founded not only upon text-books and instruction but also upon years of experience.

(b) The bibliography attached hereto is solely for the convenience of prospective applicants. The board of examiners does not recommend any one book especially, but those given in the list are regarded as representative of the authoritative literature on each subject.

(c) The prospective applicant is warned against the error of assuming that any one text-book is in the mind of the examiners in the preparation of questions. The board presents questions which are founded upon experience as well as upon pure theory. The syllabus is prepared in the hope of indicating broadly the general scope of examinations in each of the three subjects.

(d) The constitutional provisions concerning qualifications of applicants are as follows:

Constitution

Article II

Sec. 2. Members shall consist of the following:

(b) Associates who shall have been in practice on their own account or in the employ of a practising public accountant for five years next preceding the date of their application and shall be recommended by the board of examiners after examination and elected by the council. The determination of who shall be considered as practising public accountants shall be made in all cases by the board of examiners.

(c) Accountants who shall present evidence of preliminary education satisfactory to the board of examiners, who shall have been in practice on their own account or in the employ of a practising public accountant for not less than five years immediately preceding the date of their application, who shall be recommended by the board of examiners after examination and elected by the council.

(d) Accountants in practice who shall present evidence of preliminary education satisfactory to the board of examiners, who shall have been in practice on their own account or in the employ of a practising accountant for not less than ten years, one year of which shall have immediately preceded date of application, who shall be recommended by the board of examiners after examination and elected by the council.

Sec. 3. Associates shall consist of the following:

(b) Persons who shall be not less than twenty-one (21) years of age and present evidence of preliminary education satisfactory to the board of examiners; and

(c) Shall have satisfactory training and experience in public accounting. The last-named qualification may consist of:

(1) Possession of a certificate of graduation from an accounting school recognized by the examining board and a certified public accountant certificate of a standard recognized by the examining board or instead of a certified public accountant certificate employment for not less than two years upon the accounting staff of a public accountant (students not completing the full course at an accounting school shall be given credit by computing the number of years of study satisfactorily completed as being equal to one-half the same number of years employed in the office of a public accountant); or

(2) Employment for not less than two years upon the accounting staff of a public accountant and possession of a certified public accountant certificate of a standard recognized by the examining board; or

(3) Not less than four years' experience in public accounting work either upon his own account or in the office of a public accountant by a person not holding a certified public accountant certificate of a standard recognized by the examining board; or

(4) Possession of an accountant's certificate issued under the law of a foreign government of a grade accepted by unanimous action of the board of examiners and one year's satisfactory experience in practice in the United States of America; or

(5) In the discretion of the board of examiners exercised in each case, not less than three years' experience in teaching accountancy subjects in a school of accountancy recognized by the board of examiners.

(6) In addition to the foregoing qualifications, candidates for associate membership shall submit to examination by the board of examiners and, upon recommendation of that board, may be elected by the council.

VI. Examinations

(a) Examinations are conducted about the middle of May and November each year. Special sessions for the conduct of oral examination may be held by the board of examiners if desirable.

Oral

(b) Under provisions of the constitution the board of examiners is permitted to require candidates to pass written or oral or partly written and partly oral examinations.

(c) The rules of the board of examiners provide that persons who are over 30 years of age or are certified public accountants or possessors of equivalent foreign degrees approved by the board of examiners may be subjected to oral instead of written examination, provided such applicants present evidence of having been in public practice for seven years or in practice on their own account for five years.

(d) Oral examinations are technical in character and are designed to demonstate the applicant's practical knowledge of accounting. The questions are based upon the questions of the written examinations, but an effort is made to permit practitioners who have been in practice for many years to explain their treatment of principles and cases involved in a somewhat more informal way than would be possible in a written examination.

(e) Each candidate is examined separately, and the transcript of all questions and answers is presented to the entire board for consideration.

(f) Oral examinations under the rules of the board of examiners must be conducted by members of the board of examiners. Such examinations are usually held in the principal centers of accounting activity, such as Boston, New York, Chicago and San Francisco, but special sessions may be held elsewhere in the discretion of the board of examiners.

Written Examinations for Admission as Associate

(g) Written examinations can usually be arranged to suit the convenience of applicants without involving a long journey to the place of examination.

(h) Applicants whose applications have been favorably considered by the board of examiners will be notified when and where to appear for examination. They may bring fountain pens, but no further supplies are required.

(i) The following is a brief syllabus of the written examination:

First Day—First Session—Auditing, 3½ hours.
First Day—Second Session—Accounting, 5 hours.
Second Day—First Session—Commercial Law, 3½ hours.
Second Day—Second Session—Accounting, 5 hours.

AUDITING

(j) Scope: Practice and procedure in the audit of books and accounts of industrial, commercial and financial concerns, municipalities, estates, etc.

COMMERCIAL LAW

(k) Examination covers only fundamental principles of common and statute law applicable throughout the United States.

Subjects:

(a) Negotiable instruments.
(b) Contracts.
(c) Corporations.
(d) Bankruptcy.
(e) Partnership.
(f) Federal income tax.

ACCOUNTING

(l) Examination in accounting is not divided into theory and practice. The entire subject is considered as one, and problems in practical accounting and questions in theoretical accounting are contained in the papers of both sessions.

Scope: Preparation of trial balance, balance-sheet, profit and loss account; cost, manufacturing, trading, consolidated, executorship, estate, railroad, public utility, shipping and municipal accounts; foreign exchange, investigations prior to public issuance of securities, stock-exchange practice and banking, interstate commerce commission returns, federal tax returns, preparation of statements for credit purposes, systematizing.

(Optional) Actuarial science, including annuities certain, present worth of future interest payments, sinking funds, etc.

(Questions in actuarial science do not extend to life contingencies. A knowledge of algebra up to and including the binomial theorem and the use of logarithms is essential.)

Written Examinations for Admission as Member

(m) In addition to the written examination set for those seeking admission as associates, applicants for admission as members are required to present acceptable theses.

(n) Each thesis must consist of from 2,000 to 4,000 words upon one of a group of subjects to be proposed by the board of examiners and must be accompanied by an affidavit that it is the unaided work of the applicant.

(o) Associates seeking advancement to membership are required to present theses as above described.

VII. Results of Examinations

(a) The board does not make known its solutions and answers and does not divulge the actual marks given in any subject.

(b) Applicants who pass the examinations with peculiar distinction are generally mentioned by name in order of merit.

(c) Because of the great number of states using the Institute's questions and submitting the answers for grading by the Institute's examiners, results of examination cannot be made known, as a rule, within less than six weeks from date of examination.

(d) Failure in two subjects is regarded as failure in all subjects. Accounting theory and practice are regarded as one subject.

VIII. Re-Examination

(a) Applicants who fail in one subject are conditioned in that subject and may be re-examined therein at a subsequent examination upon payment of the required fee ($10).

(b) Failure to satisfy the requirements of the board of examiners in re-examination does not preclude further re-examination.

(c) All re-examinations must be written.

IX. Other Examinations

Until further notice, the board of examiners in its discretion exercised in the case of any individual applicant for admission to the Institute may accept in lieu of its own examinations a certificate as a certified public accountant of any state of the United States, the laws of which are held by the board of examiners of the Institute to be adequate and well administered, or a certificate of membership in a society of professional accountants in a foreign country whose requirements for admission are considered by the board of examiners of the Institute equivalent to the Institute's examinations, provided that such applicant shall have received such certificate as certified public accountant or member of a society of professional accountants after adequate examination, and that he shall have been in practice as a public accountant or in the employ on the accounting staff of a public accountant for a period of two years next preceding the date of his application, and provided further that he shall be recommended for admission by three members of the Institute residing near the place of residence of the applicant, such members to be selected by the board of examiners without knowledge of the applicant and to report to the board of examiners upon the applicant's professional qualifications, character and reputation.

In the case of an applicant conforming to all the provisions contained in the foregoing paragraph, and presenting evidence of five years' public practice immediately preceding the date of his application or ten years' public practice, one year of which shall have immediately preceded date of application, the board of examiners may require such applicant to submit a thesis upon one of a group of subjects to be designated by the board and upon the result of such thesis may recommend the applicant for admission as member of the American Institute of Accountants. The board, however, may accept other evidence of professional qualifications in lieu of a thesis.

X. Right of Rejection

The board of examiners reserves to itself the right to reject the application of any applicant for admission as member or associate and shall not be required to state cause for any such rejection.

XI. Election

The board of examiners recommends successful examinees to the council, which may elect or reject. As a rule, recommendation by the board is favorably considered by the council.

XII. Fees and Dues

(a) Initiation fees of members are $50; on advancement from associate to membership, $25; associates, $25.

(b) In addition to the following examination fees must be paid in all cases whether the applicant has already passed an examination approved by the Institute or not:

For admission as member	$25.00
For advancement from associate to member	25.00
For admission as associate	25.00
For re-examination in one subject	10.00

In the case of advancement from the grade of associate to that of member no additional examination fee is required if the application for advancement be accepted within twelve months of the date of admission as associate.

(c) Examination and initiation fees must accompany the application.

(d) Annual dues of the Institute are: by a member, $25; by an associate, $10.

XIII. Examination Questions

Copies of past examination questions are obtainable from the offices of the American Institute of Accountants at 10 cents each. The examination questions of the Institute from June, 1917, to May, 1921, inclusive have been prepared in book form and may be obtained from the Institute at $1.50 a copy, delivered.

XIV. Bibliography

Suggested Texts For Reading in Preparation For Examination

[See Section V., Paragraphs (b) and (c)]

[*List not shown*]

RULES OF THE BOARD OF EXAMINERS OF THE AMERICAN INSTITUTE OF ACCOUNTANTS

Approved June 13, 1922

Officers

The officers of the board shall be a chairman, a secretary and a treasurer.

Meetings

Meetings of the board shall be held upon the call of the chairman and shall be called by the chairman upon the written request of three members of the board. Five days' notice of all meetings shall be given by the secretary, except that the annual meeting may be held at the place of the annual meeting of the Institute on the day following the adjournment of that meeting. Five members of the board shall constitute a quorum for the transaction of business.

Secretary

The secretary of the Institute shall be the secretary of the board. The secretary shall keep a record of all applications received and also the records of the meetings and transactions of the board. He shall turn over to the treasurer of the board all moneys received by him.

Treasurer

The treasurer of the Institute shall be the treasurer of the board. All moneys received by the board shall be turned over to the treasurer. Disbursements shall not be made by the treasurer except upon the approval of three members of the board.

Office

The office of the Institute shall be the office of the board.

Applications and Fees

Applications will be considered only when made on blanks which will be furnished by the secretary on written request. The fees for examination and for investigation of applicants' records shall be as follows:

For admission as member	$25.00
For advancement from associate to member	25.00
For admission as associate	25.00
For re-examination in one subject	10.00

In the case of advancement from the grade of associate to that of member no additional examination fee is required if the application for advancement be accepted within twelve months of the date of admission as associate.

Examination fees and initiation fees must accompany the application.

No applicant shall be entitled to an examination by the board unless his application shall have been in the hands of the secretary of the board sixty days prior to the date of examination.

Examinations

Except as hereinafter provided, the examination of the board shall be written, and every applicant for admission as a member or an associate or for advancement to membership who shall be found to be qualified to take an examination under the constitution shall be entitled to take the written examination of the board and upon passing such examination to the satisfaction of the board may be recommended to the council for admission or advancement, as the case may be.

No applicant shall be allowed to take an examination who shall not previously have satisfied the board as to his preliminary education. A high school graduation certificate will be regarded as satisfactory evidence of such preliminary education, but until further notice the board will consider such other evidence as may be submitted.

Examinations—Written

Written examinations shall be conducted simultaneously in such places as may be determined by the boards of examiners during May and November, the dates to be selected ninety days in advance of examination.

Due notice will be given to each applicant of the time and place selected for holding the examination. Failure to be present and prepared at the time appointed will be sufficient cause for exclusion from any session of the examination.

Examinations shall include questions in (1) **Accounting Theory and Practice,** including optional problems in the elements of actuarial science, (2) **Auditing** and (3) **Commercial Law.** The time required shall not exceed two days.

Answers shall be written in ink in accordance with instructions which will be issued at the time of the examination. All supplies necessary to the examination will be furnished by the board, and, after use, shall remain the property of the board.

The secretary shall communicate in writing to each applicant the result of his examination, and the applicant shall not be entitled to further information.

Applicants who shall have passed the examination in two subjects shall have the right to be re-examined in the third subject on payment of the required fees.

Examinations—Oral

Applicants possessing such qualifications as the board from time to time may prescribe in the discretion of the board and upon the request of the applicants may be subjected to oral instead of written examination in one or more subjects. Oral examinations shall be conducted at times and places to be selected by the board.

An affirmative vote of five members of the board shall be required before any applicant who has taken an oral examination shall be recommended to the council for election or for advancement to membership.

The board in its discretion may allow any candidate who has had five years' practice on his own account or seven years' experience in public accounting, provided that such applicant shall be over 30 years of age or shall have passed a written examination conducted by a recognized accounting body, to take an oral instead of a written examination in one or more subjects.

Credit for Certain Other Examinations

Until further notice, the board of examiners in its discretion exercised in the case of any individual applicant for admission to the Institute may accept in lieu of its own examinations a certificate as a certified public accountant of any state of the United States, the laws of which are held by the board of examiners of the Institute to be adequate and well adminis-

tered, or a certificate of membership in a society of professional accountants in a foreign country whose requirements for admission are considered by the board of examiners of the Institute equivalent to the Institute's examinations, provided that such applicant shall have received such certificate as certified public accountant or member of a society of professional accountants after adequate examination, and that he shall have been in practice as a public accountant or in the employ on the accounting staff of a public accountant for a period of two years next preceding the date of his application, and provided further that he shall be recommended for admission by three members of the Institute residing near the place of residence of the applicant, such members to be selected by the board of examiners without knowledge of the applicant and to report to the board of examiners upon the applicant's professional qualifications, character and reputation.

In the case of an applicant conforming to all the provisions contained in the foregoing paragraph, and presenting evidence of five years' public practice immediately preceding the date of his application or ten years' public practice, one year of which shall have immediately preceded date of application, the board of examiners may require such applicant to submit a thesis upon one of a group of subjects to be designated by the board and upon the result of such thesis may recommend the applicant for admission as member of the American Institute of Accountants. The board, however, may accept other evidence of professional qualifications in lieu of a thesis.

The board of examiners reserves to itself the right to reject the application of any applicant for admission as member or associate, and shall not be required to state cause for any such rejection.

NATIONAL ASSOCIATION OF COST ACCOUNTANTS.—This association was organized in Buffalo in October, 1919. Its membership consists of business and professional men interested in cost accounting. It is affiliated with the Canadian Society of Cost Accountants. Local chapters have been formed in most of the larger cities. At national headquarters, 130 West 42nd Street, New York City, a service department for carrying on research work is maintained. The results secured are distributed to members through the association's publications. Approximately one hundred uniform cost systems have been collected.

The association is managed by a president, two vice-presidents, a treasurer, and a board of 24 directors. The board meets monthly in New York. At the national headquarters the organization consists of a secretary and business manager who has supervision over all affairs of the association, also an assistant secretary who has charge of research and service work, as well as an adequate staff.

The **publications** of the association are issued in three forms—a year book containing papers and discussions at annual International Cost Conferences held each year under the auspices of the association, official publications which are issued twice monthly, and bulletins, also issued twice monthly and containing all sorts of information concerning costs and the activities of the association and its chapters. The association issues in all about 1,500 pages of printed matter yearly. The membership in the association is distributed among the following classes:

Industrial Cost Accountants	51.7%
Public Accountants	28.5
Business Executives (Presidents, Vice-Presidents, Secretaries, Treasurers and Comptrollers)	13.5
Industrial Engineers	3.0
Teachers of Accountancy	2.0
Students	1.3
	100%

CONSTITUTION OF THE NATIONAL ASSOCIATION OF COST ACCOUNTANTS

(As amended to December 15, 1921)

Article I—Name

The name of this organization shall be NATIONAL ASSOCIATION OF COST ACCOUNTANTS.

Article II—Objects

Its objects shall be to unite and promote cordial intercourse among all persons interested in cost accounting, to collect through research and to disseminate generally by all appropriate means all fundamentally sound cost accounting principles and methods; to develop, improve, extend, and as far as practicable standardize the present science and art of cost accounting; to provide tests by which candidates shall be admitted to membership, and to promote and maintain high moral standards.

Article III—Membership

The Association has no capital stock and the members of the Association shall be the original subscribers hereto, and such individuals as may from time to time be admitted to membership in such manner and upon such requirements as may be prescribed by the By-Laws. The membership shall be divided into classes as provided in the By-Laws. The Association shall have power to exclude, expel or suspend a member of any class for any cause it shall deem to be subversive to the best interests of the Association and in such manner as may be prescribed by the By-Laws.

Article IV—Management

The management of the Association shall be vested in a board of Directors and the officers of the Association, namely, the President, two Vice-Presidents, and the Treasurer, who shall ex-officio be members of the Board of Directors.

Immediately after each annual election of Directors the President shall designate nine or more Directors to have charge of special activities of the Association, as hereinafter provided in the By-Laws, and these Directors, together with the President, the two Vice-Presidents, and the Treasurer, shall constitute an Executive Committee, to which the Board of Directors shall delegate and grant full power and discretion to act in the interim between meetings of the Board of Directors.

Article V—By-Laws

The By-Laws of the Association shall be admitted and taken to be its laws subject to this Constitution. They may be altered and amended only as provided in Article VI hereof. They may regulate and limit the powers and functions of the Board of Directors; they may prescribe the times and places of meetings of the Board, of the Executive Committee and of the Association; the number who shall constitute a quorum at meetings of the Board, of the Executive Committee, and of the Association; regulations as to voting; the qualifications and manner of electing members of all classes and Directors; the manner of electing or appointing officers, committees and agents of the Association and the powers and duties of officers and all others concerned, and shall contain provisions for regulating generally the internal affairs of the Association.

Article VI—Amendments

Amendments to the Constitution of the Association may be made only at the annual meetings thereof. Any proposed amendment shall be signed by at least five members with voting power and in good standing and be submitted to the Secretary at least sixty days prior to the annual meeting. The Secretary shall forthwith transmit the proposal to the Executive Committee, which shall order it printed and mailed to each member with voting power at least thirty days prior to the annual meeting. Notices for the annual meeting shall specifically call attention to the fact that an amendment, a copy of which shall be incorporated in the notice, will be proposed.

Voting members not attending the annual meeting shall vote by secret ballot addressed to the Secretary of the Association in the manner prescribed by the Executive Committee. Written ballots shall be opened by the tellers at the time that ballots of voters present are counted.

The adoption of an amendment shall require a favorable vote of three-fourths of the members present and voting, provided, however, that these favorable votes, together with mailed votes in favor, shall include at least 50% of the voting membership. An amendment shall take effect immediately upon adjournment of the meeting at which it is adopted unless otherwise specified in the amendment itself, and the Secretary shall mail a copy thereof to all members of every class.

Amendments to the By-Laws of the Association may be proposed at any time by any five voting members of the Association in good standing or any five voting members in good standing may request the Director in charge of Constitution and By-Laws to draft amendments to carry out specific changes in the By-Laws as set forth in said request. The Secretary shall present such amendments as may be proposed in either of the above ways at the first meeting of the Executive Committee following the receipt of said amendments and the Executive Committee shall instruct the Secretary to submit said amendments to the voting members of the Association for their approval by mail.

Any amendment which within sixty days of the date of its submission receives the approval of two-thirds of the voting membership as shown in the records of the Association at the time the amendment is submitted, shall immediately become a constituent part of the By-Laws of the Association and the Secretary shall send official notice of this fact to all members.

Any proposed amendment which does not receive the approval of two-thirds of the voting members as hereinbefore required within the period of sixty days shall be lost and the Secretary shall notify the members to that effect.

BY-LAWS OF THE NATIONAL ASSOCIATION OF COST ACCOUNTANTS

(As amended to December 15, 1921)

Article I—Members

SECTION 1. Membership in the Association shall be open to individuals of either sex who are genuinely interested in the aims and objects of the Association; who are willing to subscribe to the Constitution and By-Laws, and who are otherwise qualified as hereinafter specified.

SECTION 2. MEMBERS. Men or women being 21 years of age and qualified as set forth in Section 1 of this Article, may be elected as MEMBERS, provided they are qualified under any one of the following groups:

(a) Persons who are actively engaged as accounting officers, or other employees of business organizations or associations, whose duties consist in whole or in part of executive supervision over, or control of, all or part of the organization's cost accounting.

(b) Persons who are engaged professionally in the public practice of accounting on their own account or in the employ of others so engaged and who have been so engaged for a period of at least three years or who have had experience equivalent to that required in subdivision (a) hereof.

(c) Executive officers or department heads of business organizations or associations who are genuinely interested in the development of the science of cost accounting.

(d) Persons engaged in teaching cost accounting or other branches of business management related to cost work, either through residence or correspondence instruction.

The Board of Directors or the Executive Committee may, at its discretion, add to the above such additional groups as they deem expedient for the best interests of the Association.

SECTION 3. JUNIORS. Men or women being under 26 years of age, but qualified as set forth in Section 1 of this Article, may be admitted to limited membership in the Association as JUNIORS, provided they are qualified under any one of the following groups:

(a) Students who are enrolled for any recognized course in accounting which embraces cost accounting and who have completed at least one-half of said course.

(b) Persons employed in Cost Departments of business organizations or associations who have no executive supervision over nor control of any part of the organization's cost accounting.

(c) Persons in the employ of professional accountants, but who have less than three years' experience in such employ.

The Board of Directors or the Executive Committee may, at its discretion, add to the above such additional groups as they deem expedient for the best interests of the Association.

SECTION 4. JUNIORS shall be entitled to all the privileges of the Association except that they may not vote or hold office within the Association. No person shall be continued as a JUNIOR after reaching the age of twenty-six years. JUNIORS who have not qualified for full membership when they become twenty-six years of age shall be automatically dropped from membership.

SECTION 5. ASSOCIATE MEMBERSHIP. The Cost Associations of particular industries or other associations interested in the development of cost work may be admitted to ASSOCIATE MEMBERSHIP in the National Association of Cost Accountants under such rules as may from time to time be established by the Board of Directors or the Executive Committee.

SECTION 6. (a) The Board of Directors or the Executive Committee shall fix the amount of the initiation fee which shall be paid by new members and shall at their discretion have power to suspend or reduce said initiation fee when in their judgment such suspension shall be in the best interests of the Association, provided that at no time shall the initiation fee be more than $15.00 and provided that in the absence of definite action by the Board of Directors or the Executive Committee the initiation fee shall be $15.00.

(b) The amount of the annual dues of the Association shall be fixed by vote of the Board of Directors or the Executive Committee, provided that at no time shall the annual dues be more than $25.00 per year for MEMBERS and $10.00 for JUNIORS and provided that in the absence of definite action by the Board of Directors or the Executive Committee the annual dues shall be $25.00 for MEMBERS and $10.00 for JUNIORS.

SECTION 7. A candidate who is admitted to full Membership in the Association during any fiscal year shall be subject to dues only for the unexpired portion of said year dating from the date of his election. Each MEMBER shall receive a bill for dues for the balance of the current fiscal year at the time he is notified of his election. JUNIORS shall be subject to dues for the fiscal year in which they are elected, provided that if elected subsequent to March 1 in any fiscal year they shall pay only one-half of the annual dues for the current fiscal year. Dues shall be payable semi-annually.

SECTION 8. At the beginning of each fiscal year, September 1, a notice of dues payable for that year shall be sent to each MEMBER and JUNIOR. The membership of any individual who shall have failed on November 30 of any year to pay his dues for the first six months of that year or who shall have failed on May 31 of any year to pay his dues for the whole of that year may be terminated. Such a person may, however, upon the payment of $10.00 and all dues in arrears and upon his re-election by the Executive Committee be reinstated to his former status, no initiation fee being required upon such reinstatement.

SECTION 9. All applications for membership shall be made in writing on application blanks furnished for that purpose and addressed to the Secretary of the Association. The Secretary shall present all applications to the Director-in-Charge of Membership for his approval and then lay them before the Executive Committee for action. The approval of a majority of the members present and voting at any meeting of the Executive Committee shall be sufficient for election.

SECTION 10. Any MEMBER or JUNIOR may resign at any time, but such resignation shall not become effective until accepted by the Executive Committee and shall not relieve the resigning individual from the payment of dues for the current fiscal year or give any right to a rebate of dues paid or any right to a pro rata or other share of the assets of the Association.

SECTION 11. The Association may refuse to receive the dues of any MEMBER or JUNIOR adjudged by the Executive Committee to have violated the Constitution or By-Laws of the Association, or who in the opinion of the Executive Committee by unanimous vote shall be guilty of conduct rendering him unfit to continue membership, and the Board of Directors by a two-thirds vote may suspend or expel such a person from membership.

SECTION 12. Each MEMBER shall receive a suitable certificate indicating his status in the Association.

Article II—Fellows

SECTION 1. The Board of Directors or the Executive Committee shall, as soon as they deem it expedient, establish standard examinations or other requirements under which members of the Association may qualify in a special group known as FELLOWS. Examina-

tion and requirements for election to this class shall be of such a nature as to limit the class to those members of the Association who have made some original contribution to the science of cost accounting or who are able to demonstrate special qualifications in the field of cost accounting. Special certificates shall be issued to FELLOWS over the seal of the Association. There shall be no charter membership among the FELLOWS.

The board of Directors or the Executive Committee may establish such additional rules as it may deem necessary to carry out the intent of this Section.

Article III—Meetings

SECTION 1. The annual meeting of the Association for the election of Directors and Officers and the transaction of any other business whatsoever relating to its affairs shall be held each year during the month of September. The place and date of each annual meeting shall be fixed by a majority vote of the MEMBERS present and voting at the preceding annual meeting.

SECTION 2. The Secretary shall mail a notice of each annual meeting to each MEMBER and JUNIOR not less than twenty days prior to the meeting, but no failure or defect of notice of the annual meeting shall invalidate the same or any procedure taken thereat.

SECTION 3. A special meeting of the Association may be held at any time and place upon call or notice by the Executive Committee, which it may give on its own initiative and which it shall give upon the written request of twenty-five Members. The call or notice shall be mailed to each MEMBER and JUNIOR at least twenty days prior to the date set therein for the meeting and shall state the purpose thereof.

SECTION 4. At each meeting of the Association each MEMBER present shall be entitled to one vote. There shall be no voting by proxy. There shall be no voting by mail except on the adoption of an amendment as provided in Article VI of the Constitution and except on the authorization of the Board of Directors to assume liabilities as provided in Article IV, Section 8, hereof.

SECTION 5. Fifty MEMBERS shall constitute a quorum at any meeting of the Association, but those present at any duly held meeting, although less than a quorum, may adjourn the meeting without further notice to any given time and from time to time.

SECTION 6. The order of business at all meetings of the Association, of the Board of Directors and of the Executive Committee shall be such as may be prescribed by the presiding officer; or if objection be made thereto, then by a majority vote of the meeting. Roberts' Rules of Order shall govern all meetings of the Association, of the Board of Directors, of the Executive Committee and of all other committees on any point not covered by the Constitution and By-Laws.

Article IV—Board of Directors and Executive Committee

SECTION 1. The Board of Directors of the Association shall consist of twenty-four MEMBERS elected for a period of three years, one-third retiring each year.

SECTION 2. At the annual meeting in September, 1922, eight Directors for a period of three years, two Directors for a period of two years and two Directors for a period of one year shall be elected by a plurality vote of the MEMBERS present and voting, in order that the Board of eighteen Directors shall consist of twenty-four Directors.

SECTION 3. At each annual meeting thereafter there shall be elected, by plurality vote of the MEMBERS present and voting, eight Directors for a period of three years to replace the retiring Directors.

SECTION 4. Directors shall hold office until their successors are elected and have qualified. If any director shall die, or his office otherwise become vacant, his unexpired term shall be filled by a majority vote of the Board of Directors. If for any reason the eight Directors as herein provided are not elected at the annual meeting, they may be elected at any special meeting called for the purpose in accordance with Article III hereof.

SECTION 5. If the membership in the Association of any MEMBER who shall have been elected a Director shall for any reason terminate, his office as Director shall automatically become vacant.

SECTION 6. The Board of Directors shall meet at least semi-annually at such times and places as it may select. At such meetings eight Directors present in person shall constitute a quorum. At all meetings of the Board of Directors the President of the Association, if present, shall act as Chairman. Notices of Directors' meetings shall be mailed by the

Secretary or as the Board may otherwise direct, but no failure or defect of notice shall invalidate the meeting or any proceeding taken thereat.

SECTION 7. Immediately after the annual elections in each year, the President of the Association shall designate nine Members of the Board of Directors, each to have general supervision of one of the following activities of the Association:

Director-in-Charge—Constitution and By-Laws, Legal Matters.
Director-in-Charge—All matters pertaining to the securing, electing and classifying of Members.
Director-in-Charge—Chapters and all matters pertaining thereto.
Director-in-Charge—All matters connected with the relations of the National Association with allied Associations.
Director-in-Charge—Research and Standardization.
Director-in-Charge—Publications.
Director-in-Charge—Library and Education.
Director-in-Charge—All matters pertaining to JUNIORS.
Director-in-Charge—Meetings.

The Directors so designated, together with the President, the two Vice-Presidents and the Treasurer of the Association, shall constitute an Executive Committee which shall have the right to exercise in its sole discretion any and all powers of the Board of Directors in the interim between meetings of said Board. At any meeting, regular or special, of said Executive Committee, five Members thereof present shall constitute a quorum for all purposes. At each meeting of the Board of Directors the Executive Committee shall report all action taken by it since the last preceding meeting of the Board.

SECTION 8. On and after March 1, 1920, neither the Board of Directors nor the Executive Committee shall have power to assume any liability in behalf of the Association for an amount in excess of the funds in the hands of the Treasurer, not otherwise appropriated, unless expressly authorized by a three-fourths vote of all MEMBERS in good standing at a special meeting called for that purpose. Voting by mail shall be permitted at said special meetings.

SECTION 9. The Board of Directors or the Executive Committee may, in its discretion, authorize the President to designate, in addition to the nine Members of the Board of Directors specified in Section 7 hereof, one or more additional Members of said Board, each to have general supervision of any activity of the Association not listed in Section 7 hereof. Each Director so designated shall at once become a Member of the Executive Committee.*

Article V—Officers and Secretary

SECTION 1. The officers of this Association shall be a President, First Vice-President, Second Vice-President, and a Treasurer, all of whom shall be Members and all of whom shall ex-officio be Members of the Board of Directors.

SECTION 2. These Officers shall be elected by a plurality vote of the MEMBERS present and voting at the annual meeting, and shall hold office for one year and until their respective successors are duly elected and qualified. The term of office of each shall expire at the end of the fiscal year in which he is elected.

SECTION 3. Officers shall be eligible for re-election, except that the President shall not serve more than two successive terms.

SECTION 4. The duties ordinarily performed by a Secretary as an Officer shall devolve upon an employee, who shall be engaged by the Executive Committee and be given the title of Secretary and Business Manager. Such employee shall not be a MEMBER or JUNIOR of the Association, nor shall he be associated in business directly or indirectly with any MEMBER or JUNIOR, nor shall he engage in the professional practice of cost accounting or any other business, but he shall devote his entire time and attention to his duties as Secretary. His compensation shall be fixed by the Executive Committee.

SECTION 5. The Executive Committee may allow to any Officer or Director such sums for compensation or expenses as it in its discretion may determine.

SECTION 6. In case of a vacancy in the office of President, the First Vice-President and

* Under authority of this section the Board of Directors on Aug. 29, 1921, authorized the President to create a new department of Publicity and Lectures, and to divide the departments of Research and Standardization and Library and Education each into two separate departments.

the Second Vice-President shall automatically advance; the First Vice-President to the office of President and the Second Vice-President to the office of First Vice-President, the office of Second Vice-President thereby becoming vacant. A vacancy in the office of either of the Vice-Presidents, or of the Treasurer, shall be filled for the unexpired term thereof by a majority vote of the Executive Committee.

SECTION 7. Any Officer or Director may be removed for cause by a two-thirds vote of the Board of Directors at a special meeting called for that purpose, after such proceedings as the Board of Directors may determine. Upon such removal of an Officer or Director his office shall be filled for the unexpired term thereof by a majority vote of the Board of Directors.

Article VI—Duties of Officers and Secretary

SECTION 1. PRESIDENT. The President shall be the executive head of the Association and when present shall preside at all meetings of the Association, of the Board of Directors, and of the Executive Committee. He shall exercise a general supervision over the affairs of the Association and shall see to the enforcement of the By-Laws and to the carrying out of all resolutions and proceedings of the Association, of the Board of Directors and of the Executive Committee. He shall keep the Executive Committee fully informed and shall frequently consult it concerning the business and activities of the Association.

SECTION 2. VICE-PRESIDENTS. In case of the absence or disability of the President the ranking Vice-President shall perform his duties. Each Vice-President shall have such other powers and duties as may be prescribed by the Board of Directors or by the Executive Committee.

SECTION 3. TREASURER. The duties normally to be performed by the Treasurer shall, in this Association, be performed by the Secretary, except that the Treasurer shall receive and deposit such sums as the Secretary may from time to time transmit to him, and he shall disburse such sums only on vouchers approved by the Executive Committee. The funds received by the Treasurer shall be deposited in a bank to be selected by the Executive Committee in an account in the name of the Association. The Treasurer shall draw checks on said account on his sole signature. He shall keep and preserve proper vouchers and books of account which shall at all times be open to inspection by or on the order of the Executive Committee and which shall be subject to audit at any time by the Auditing Committee. At the close of his term of office he shall deliver to his successor all funds, books, papers, documents and other valuables belonging to the Association which shall be in his custody or possession. He shall furnish a bond approved by the Executive Committee as to form and amount for the faithful performance of his duties.

SECTION 4. SECRETARY. The Secretary shall keep a roll of the MEMBERS and JUNIORS, give notices of meetings of the Association, of the board and of the Executive Committee, keep a record of proceedings at such meetings, preserve all communications pertaining to the affairs of the Association, and perform such other duties as shall pertain to the office of Secretary, and as may be prescribed by the Executive Committee. He shall keep proper books of account showing dues receivable and collected from MEMBERS of all classes and all other funds receivable and collected. He shall collect such dues and all other funds receivable by the Association subject to the supervision and control of the Executive Committee, and he shall promptly turn over to the Treasurer all funds collected. The membership roll, all books of account and all other records, documents or other things relating to the Association in the custody of the Secretary shall be open at all times to inspection by any Officer of the Association and shall be subject to audit at any time by the Auditing Committee. He shall furnish a bond approved by the Executive Committee as to form and amount for the faithful performance of his duties.

Article VII—Committees

SECTION 1. Each Director-in-Charge of an activity of the Association as set forth in Article IV hereof, may, in his discretion, appoint such committees from among the MEMBERS as he may deem expedient, to assist him in carrying on the work which has been placed under his supervision. All such committees shall report to the appointing Director-in-Charge and the sole responsibility for the supervision of the activities under their care shall rest with said Director.

SECTION 2. At the annual meeting in September, 1920, and at each succeeding annual meeting, a Nominating Committee of five shall be elected by a plurality vote of the MEM-

BERS present and voting. One MEMBER of this Committee, who shall be its Chairman, shall be elected from the Directors who have served on the Executive Committee during the fiscal year immediately preceding the annual meeting. One Member of the Committee shall be elected from the remaining Members of the Board of Directors during said year. The remaining three Committeemen shall be elected from the other MEMBERS of the Association.

SECTION 3. The Nominating Committee shall nominate candidates for the four offices and expiring directorships of the Association. The Committee shall report to the Secretary on or before August 1 of each year, stating the names of all consenting nominees. The Secretary, on or before August 15, shall mail to all MEMBERS a complete list of the nominations made by the Nominating Committee. At the annual meeting of the Association the nominations previously reported by the Nominating Committee shall be made by the Chairman of that Committee; other nominations may be made orally by any MEMBER.

SECTION 4. Special committees may at any time be created by the Executive Committee and appointed as it may prescribe.

Article VIII—General Provisions

SECTION 1. Whenever the word "Member" is used in the Constitution or By-Laws without qualification, it shall mean MEMBER as defined in Article I, Section 2, hereof, JUNIORS, although technically not MEMBERS, are referred to in the Constitution and By-Laws as MEMBERS of the Association, but such reference shall in no way be construed to confer upon them any rights, privileges or obligations not applicable to their class as specified in Article I, Section 4, hereof.

SECTION 2. The fiscal year shall begin on the first day of September.

SECTION 3. Any notice to MEMBERS of the Association or to any Director or Officer shall be deemed sufficiently given if mailed to the last Post Office address furnished by him to the Secretary; if no address has been so furnished, then to his last known Post Office address. The Secretary may give any notice whatsoever to be given by or on behalf of the Association.

SECTION 4. If at any meeting of the Association, of the Directors, or of the Executive Committee, the President is absent, and no one authorized to perform his duties is present, or if the Secretary is absent, and no one authorized to perform his duties is present, then a Chairman or a Secretary pro tem, or both, as the case may require, may be appointed by a majority vote of the MEMBERS present and voting.

SECTION 5. Any contracts or similar undertakings that may be made by or for the Association shall be made in such manner as the Board of Directors or the Executive Committee may in any given case or from time to time prescribe. No contracts or similar undertakings or obligations shall be binding upon the Association or any of its MEMBERS unless authorized by the Association, by the Board of Directors, or by the Executive Committee.

SECTION 6. The Executive Committee may adopt a common seal for the Association, to be in such form and to be used in such manner as the Executive Committee shall direct.

SECTION 7. In case of dissolution of the Association and liquidation of its affairs, any money or other assets remaining after the payment of all obligations shall be distributed among the MEMBERS in such proportions as the Board of Directors may determine and direct. In general the Board of Directors shall seek to distribute such money or other assets proportionately to the amount that the said MEMBERS have paid to the Association during the course of their respective memberships, but the Board may vary this plan in whole or in part in its sole discretion; in any case the decision and determination of the Board shall be final and conclusive upon all persons in any way interested.

Article IX—Services to Be Rendered by the Association

SECTION 1. With the object of rendering service for the general benefit of its MEMBERS, the Association will undertake such activities as in the sole discretion and judgment of the Board of Directors are designed to promote and develop the Association and to carry into effect the objects stated in Article II of the Constitution.

SECTION 2. Local chapters of this Association may be formed in such places as the Board of Directors may approve, subject to such regulations as to membership, organization, procedures and financial relationship with the Association as the Executive Committee may prescribe.

RULES AND REGULATIONS OF THE NATIONAL ASSOCIATION OF COST ACCOUNTANTS FOR THE GOVERNMENT OF LOCAL CHAPTERS

As Revised by the Board of Directors, September 16, 1921

When Chapters May Be Formed

Fifteen MEMBERS and JUNIORS of the National Association of Cost Accountants, of which number at least ten shall be MEMBERS, resident within a radius of fifty miles of the proposed chapter centre, may petition for authority to establish a local chapter within said territory.

Form of Petition

The petition shall be in the following form:

> To the Secretary,
> National Association of Cost Accountants,
> 130 W. 42d St., New York.
>
> Dear Sir:
>
> The undersigned MEMBERS and JUNIORS of the National Association of Cost Accountants herewith request that a charter be issued for the establishment of a Local Chapter of the Association in the following territory:
>
> Signed

Chapter Territory

The boundaries of the chapter shall be fixed in the charter. Chapters shall, as a rule, include all territory within a radius of approximately fifty miles of the chapter centre where the meetings of the chapter are to be held. In some cases special boundaries may be established to meet local conditions in regard to transportation, adjacent chapters, and similar matters. In all cases the suggested territory of the proposed chapter should be defined in the petition.

Preliminary Steps

A lesser number of MEMBERS and JUNIORS may meet and form a temporary organization for the purpose of securing the necessary number of members for a permanent chapter.

Petition Addressed to Secretary

Petitions for authority to establish a local chapter shall be addressed to the Secretary of the Association. He shall give notice to all members of the Association within the district that such application has been received and then submit the application to the Director-in-Charge of Chapter Organization for his examination, and upon receipt of his report lay it before the Executive Committee for final action.

Who May Be Members of Chapter

All members of the National Association of Cost Accountants, resident within the territory of the chapter, shall be considered members of the local chapter. Members outside of the chapter territory may become members by special request addressed to the chapter secretary and approved by the National Secretary.

Charter Issued by Secretary

When the petition has been approved by the Executive Committee, the Secretary shall issue a charter and constitution to the local chapter . . . . bearing the seal of the Association and the signatures of the President, the Director-in-Charge of Chapter Organization and the Secretary of the Association.

Temporary Officers

The preliminary steps in the organization of a local chapter shall be conducted by a temporary chairman, a temporary secretary and an organization committee of at least five members elected from among the petitioners.

Permanent Officers

Immediately after the charter has been issued, the temporary officers shall call a meeting for the purpose of electing permanent officers for the chapter. It is desirable that a nominating committee be appointed, or elected, for the purpose of suggesting nominees for the several offices, and also the directorships.

Chapter Officers

The permanent officers of each local chapter shall be a President, a Vice-President, a Secretary and a Treasurer and five Directors. The offices of Secretary and Treasurer may be combined if desired. Officers shall be elected for a period of one year and are eligible for re-election. Officers shall be ex-officio members of the Board of Directors.

Term of Office

The fiscal year of the chapters shall be the same as the fiscal year of the National Association, namely, from September 1 to August 31, and the officers shall retain office for this period.

Annual Meeting

Each chapter shall hold an annual meeting not later than May 31 of each year, for the purpose of electing officers for the following year. The officers elected at such meetings shall assume office at the close of the current fiscal year—August 31.

Nomination Committee

At each annual meeting there shall be elected a Nomination Committee of three members who shall prepare a list of nominees for the various offices and directorships to be filled at the ensuing annual election. These nominees shall be transmitted to the members of the chapter by the chapter secretary at least three weeks in advance of the annual meeting. Nominations may also be made at the annual meeting by any two members present.

Duties of the President

The President shall be the chief executive officer of the chapter. He shall preside at all meetings of the Board of Directors and of the chapter. He shall approve all expenditures from chapter funds upon authorization of the Board of Directors. He shall designate the special duties of the members of the Board as indicated in the section dealing with the duties of Directors. He shall perform such other duties as may be necessary for the supervision of the activities of the chapter.

Duties of the Vice-President

The Vice-President shall perform the duties of the President in the absence or disability of that officer.

Duties of the Secretary

The Secretary shall maintain a register of chapter members. He shall give notice of all meetings. He shall make reports of each meeting of the chapter and of the Board of Directors to the Secretary of the National Association, and to the Director in charge of chapters. He shall act in general as the point of contact between the chapter and the National organization.

Duties of the Treasurer

The Treasurer shall keep all financial records and books of accounts. He shall make an annual report of the finances of the chapter to the Board of Directors, a copy of which shall be forwarded to the National Secretary.

Duties of the Board of Directors

Immediately after each annual election the President of each local chapter shall designate one member of the Board of Directors to have general supervision of Meetings, one for Membership, one for Publications, one for Publicity, and one for Research and Standardization. The Directors so designated shall assume such duties as of September 1 following. The Directors, in addition to their general duties as members of the Board, shall supervise the activities of the chapter in the special fields assigned to them. In

this work they shall work in close association with the Directors-in-Charge of the similar activities for the National Association. They may at their discretion appoint committees from the members of the chapter to assist them in carrying on the work under their direction, and it is recommended that this practice be followed in all cases.

Financial Support of Local Chapters

The National Association will defray the expenses of local chapters on the following basis:

(a) The National Association will furnish to the local chapters all the necessary stationery for notices and correspondence. Requisitions for stationery should be made by the local secretary.

(b) The National Association will defray the expense of preparing and mailing notices of regular chapter meetings on the basis of five cents for each notice sent out. In order to keep this expense within reasonable limits the number of notices which will be paid for on this basis is limited to twice the membership of the chapter. If a chapter sends out more than this number of notices, the expense will have to be borne by the chapter. Notices to the National Secretary and Director-in-Charge of Chapters and to the secretaries of other chapters may be counted in the number of notices mailed. Payment for notices each month will be based on the actual number of notices sent out within the above limit. The chapters will be paid their allotments each month on receipt of the reports of chapter meetings. The secretary in making his report of chapter meetings should note thereon the number of notices sent out.

(c) The National Association will pay to the local chapters $15 for each meeting held during the year up to a limit of twelve meetings. This allowance may be used for rent of room, expense of speaker or any other items, according to the judgment of the local officers. The payment will be made on the basis of the secretary's report of the meetings held.

(d) The National Association will remit the membership dues of the secretaries of local chapters.

Local Dues

There shall be no local dues for chapter membership, but the chapters may, if they wish, levy special assessments on their members not in excess of $5 per head to meet special contingencies. Such assessments must be approved by fifty per cent of the chapter members.

An excellent way to supplement chapter funds is to hold chapter meetings in the form of dinners, charging to the members a small addition over the cost of the dinner—usually twenty-five cents or fifty cents. This plan has been followed very successfully by most of the chapters.

Use of Chapter Funds

The chapters may expend their funds either from national grants or from other sources in any way they see fit, provided that all expenditures must be approved by the chapter presidents and semi-annual financial statements must be made to the National Secretary on special forms which are supplied for that purpose.

Expenditures For Other Purposes

Chapter funds as outlined above are to be used in the conduct of the local chapter. The necessary expense for work which the chapters may undertake in behalf of other departments of the National Association, such as membership, is a proper charge against the budgetary appropriations of such departments and need not be paid out of the regular chapter funds; all such expenditures, however, must be approved in advance by the Director-in-Charge of the department involved. For example, if the chapter plans a membership campaign the plan of the campaign and an estimate of the expense should be sent to the Director-in-Charge of Membership for his approval before it is started. If approved, the expense will be borne by the Department of Membership.

Reports of Meetings

The secretary of the chapter shall report each meeting of the local chapter to the National Secretary on special forms supplied for this purpose. Reports should be made at least once each month, and oftener if additional meetings are held.

Annual Audit

There shall be an annual audit of the books of the treasurer of each local chapter, copy of which shall be furnished to the National Secretary. Each treasurer shall turn over all records and funds to his successor.

Cancellation of Charter

Charters may be revoked by the Board of Directors as set forth in Section VII of the constitution for local chapters. If any chapter fails to hold a meeting during any period of sixty days between September 1 and June 1 of any year the charter of that chapter may be cancelled at the discretion of the National Board of Directors.

FORM OF CHARTER
NATIONAL ASSOCIATION OF COST ACCOUNTANTS
CHARTER AND CONSTITUTION
OF

The .... Chapter

Messrs. ....

....

....

being MEMBERS of the National Association of Cost Accountants and.................

....

....

....

being JUNIORS of the National Association of Cost Accountants, having made application for authority to establish a local chapter of the Association in the................. district, as hereinafter defined, and such application having been approved by the Director-in-Charge of Chapter Organization and by the Executive Committee, on behalf of the Board of Directors of the National Association, the above-mentioned MEMBERS and JUNIORS of the National Association of Cost Accountants are herewith authorized and empowered to establish a chapter of the Association in the said district, subject to the provisions of the Constitution of Government hereinafter set forth and subject to such Rules and Regulations as have been established or may hereafter be established by the Board of Directors or the Executive Committee of the National Association of Cost Accountants.

Name of Chapter

SECTION I

This Chapter shall be known as the . ... Chapter of the National Association of Cost Accountants

Boundaries of the Chapter

SECTION II

The chapter is authorized to accept members from the following territory:

Objects of the Chapter

SECTION III

The objects of the Chapter shall be as follows:

(a) To promote better acquaintance among the members of the National Association resident within the territory of the Chapter.
(b) To hold meetings for the discussion of cost questions and for the advancement of the science of cost accounting by the exchange of ideas.
(c) To aid in furthering the best interests and in carrying out the objects of the National Association.

Membership of the Chapter
SECTION IV

The membership of the Chapter shall consist of the members of the National Association of Cost Accountants, resident within the territories set forth in Section II of this instrument. The MEMBERS and JUNIORS named as petitioners in this instrument shall be the Charter Members of said chapter.

Government of the Chapter
SECTION V

The officers and governing bodies of the chapter shall be elected in the manner prescribed in the Rules and Regulations for Local Chapters.

Finances of the Chapter
SECTION VI

The financial affairs of the chapter shall be conducted in accordance with the provisions set forth in the Rules and Regulations for Local Chapters.

SECTION VII

This Charter may be revoked by vote of the Board of Directors of the National Association, provided that the officers of the chapter shall be given notice of such proposed action thirty days in advance of the meeting of the Board, at which it shall be considered and may be represented before the Board when the question of revocation is discussed. If no meeting of the chapter is held during any period of sixty days between September 1 and June 1 in any fiscal year the National Board of Directors may at its discretion cancel the charter of the chapter.

Given under the Seal of the Association this . . . . . day of . . . . . in the year . . . .

. . . .
Director-in-Charge of Chapter Organization.

. . . .
President.

. . . .
Secretary.

AMERICAN SOCIETY OF CERTIFIED PUBLIC ACCOUNTANTS.—This society has its headquarters at 421 Woodward Building, Washington, D. C. Its official organ is "The Certified Public Accountant." Its officers consist of a president, five vice-presidents, a treasurer, a secretary, and a general counsel. To secure proper distribution of activities, the country is divided into ten districts, one director being chosen from each district. Each state also has a representative. Committees appointed are: one on Professional Education, one on Ethics, one on Legislation, and one on the Relations of the national organization with State Societies of Certified Public Accountants.

The American Society was organized in 1921 and has a membership of about 1,000. Its general aim is to extend and protect the rights and privileges of certified public accountants and generally to promote the interests of the accounting profession as they relate to the country as a whole. It co-operates with duly organized State Societies, and members are encouraged to join these state organizations.

CONSTITUTION OF THE AMERCIAN SOCIETY OF CERTIFIED PUBLIC ACCOUNTANTS

[As amended July 1, 1923]

Article I

The name of this organization shall be The American Society of Certified Public Accountants.

Article II

The object of this society shall be to protect and foster the certificate of Certified Public Accountant, as granted by the States and political subdivisions of the United States of America.

Article III

The membership of this society shall consist of certified public accountants. Every member shall be the legal holder of a C. P. A. certificate issued by a State, or political subdivision of the United States of America.

Article IV

Any certified public accountant may be admitted to membership upon application, supported by such evidence as may be considered satisfactory by the board of directors as establishing his lawful possession of a C. P. A. certificate granted by a State or political subdivision of the United States of America.

Article V

Upon admission every member shall be entitled to a certificate of membership in this society, and each member shall agree in writing, prior to receipt of such certificate, to surrender the same to this society in the event of withdrawal or termination of membership for any cause except death.

Article VI

The members of the society shall be classified by States according to residence.

The members from each State shall elect from their number a representative or representatives for that State and shall be entitled to one representative for each 50 members. Each State whose membership is less than 50 shall be entitled to one representative. A State which has more than 50 members shall be entitled to one representative for any membership remainder which is a major fraction of 50.

The States shall be grouped into districts as follows:

The first district shall be composed of the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

The second district shall be composed of the States of New York and New Jersey.

The third district shall be composed of the States of Pennsylvania, Maryland, and Delaware, and the District of Columbia.

The fourth district shall be composed of the States of Ohio, Michigan, Indiana, Kentucky, and West Virginia.

The fifth district shall be composed of the States of Illinois and Wisconsin.

The sixth district shall be composed of the States of Tennessee, North Carolina, South Carolina, Mississippi, Georgia, Florida, Virginia, and Alabama.

The seventh district shall be composed of the States of Washington, Oregon, Wyoming, Idaho, and Montana.

The eighth district shall be composed of the States of California, Nevada, Arizona, Colorado, Utah, and New Mexico.

The ninth district shall be composed of the States of Texas, Oklahoma, Arkansas, and Louisiana.

The tenth district shall be composed of the States of North Dakota, South Dakota, Minnesota, Iowa, Nebraska, Missouri, and Kansas.

The representatives of the States of each district, except the second district, shall elect from their number one director annually: Provided, however, That no member who is a resident of the same State as the retiring director may be elected director except by unanimous vote of all the representatives of the States of that district. The representatives of the States of the second district shall elect three directors annually.

The governing body of the association shall be the board of directors, consisting of the directors elected by the State representatives by districts for a term of one year and until their successors shall have been elected and qualified, and such officers elected by said board of directors who are not regularly elected members of the board.

Article VII

The directors shall elect annually from the membership of the society a president, five vice-presidents, a secretary, and a treasurer, all of whom shall serve for a period of

one year and until their successors have been elected and qualified and all of whom shall be members of the board of directors by reason of such election.

Article VIII

Amendments to the Constitution or By-Laws of this society, which have been recommended by not less than twenty-five members, or a majority of the Board of Directors, shall be submitted to the members for a mail vote, and when approved in writing by a majority shall be declared by the president to be effective.

BY-LAWS OF THE AMERICAN SOCIETY OF CERTIFIED PUBLIC ACCOUNTANTS

(As amended July 1, 1923)

Article I

It shall be the duty of the board of directors to conduct the affairs of the society. It shall be their duty to perform such acts as shall protect and foster the C. P. A. certificate as granted by the States, or political subdivisions, of the United States of America. To this end they shall supervise the publication of a monthly magazine, to be known as "The Certified Public Accountant"; they shall take cognizance of all present and proposed legislation relative to the granting of the C. P. A. certificate and shall take such action in respect thereto as in their judgment will further the objects of the society; they shall collect and consider evidence indicating that any holder of a C. P. A. certificate granted by a State board has committed any act which would be a cause for the rescinding of his certificate, and if the evidence in their opinion justifies, take action to assist the State boards in securing a trial and determination of the case; they shall collect and consider evidence concerning the violation of any statute regulating the granting of C. P. A. certificates, and if, in their opinion, the evidence justifies, take action to assist the State boards in forwarding the prosecution of such violation.

Article II—Duties of Officers

It shall be the duty of the president to preside at all meetings. The duties of vice-presidents, treasurer, and secretary shall be those usually appertaining to such office.

Article III—Meeting of the Board of Directors

The president shall call meetings of the board of directors whenever he considers it advisable, and upon written request signed by four directors the secretary shall call such meeting. A quorum shall consist of seven members of the board.

Article IV—General Meetings

Conventions and meetings of the members or representatives shall be held as the board of directors may consider desirable, or they shall be held on the written request of fifteen representatives or fifty members, ten of whom shall reside in ten States. The annual meeting shall be held in the month of September.

Article V—Election of Representatives, Directors, and Officers

For the purpose of individual membership activity and expression in the business of this society, each State shall be considered a distinct unit. The membership of each State shall during the month of June in each year nominate by mail, on ballots furnished by the society, the number of representatives to which the State shall be entitled.

The membership of each State shall during the month of July of each year elect from among the nominations so made the number of representatives to which the State is entitled. The election of representatives shall be by mail on ballots furnished by the society.

During the month of August the elected representatives of the States in each district shall by mail vote, on ballots provided by the society, elect a director (in the second district three directors) from among their own number.

On the last day of the annual meeting in each year the newly elected directors shall convene at the headquarters of the society and elect the officers of the society and transact such other business as may be necessary. The retiring board of directors shall hold a

meeting the day previous for the purpose of closing up the affairs of the year and preparing its annual report.

In voting for directors each representative shall indicate his first, second, and third choices. In case no person receives a majority of first choice, the votes shall be counted with a value of three points for first choice, two points for second, and one point for third choice.

Article VI—Auditors

Three auditors shall be nominated and elected annually by the membership at the same time and the same manner as the State representatives. The duties of the auditors shall be not only to audit the accounts of the society, but also to audit the elections.

Article VII

This society shall maintain offices in the city of Washington, D. C., and such other place or places as may be determined by the board of directors.

Article VIII—Fees and Dues

The initiation fee, which shall include dues for that year to be paid by each member upon admission, is twenty-five dollars, until such time as the board of directors see fit to reduce it, and no application for membership shall be considered unless it is accompanied by this fee.

The dues to be paid by each member are fifteen dollars per year, until such time as the board of directors see fit to reduce it, payable during the month of January for that year. The dues shall include an annual subscription to "The Certified Public Accountant."

Article IX—Expulsion

Any member whose dues shall remain unpaid thirty days after the last day for payment as provided in Article VIII may be dropped from the membership rolls one month after written notice has been given. His membership status may be restored by a two-thirds vote of the board of directors.

The board of directors shall expel any member whose C. P. A. certificate has been rescinded by any State.

The board of directors may by a two-thirds vote revoke the certificate of any member for sufficient cause after written notice to the holder thereof and a hearing thereon. The secretary shall issue such notice whenever requested by three directors or five members of the society,

SECTION 29

ECONOMICS

CONTENTS

SECTION 29

ECONOMICS[1]

Wealth

DEFINITIONS.—Economics is the science of wealth.

Wealth consists of material objects owned by human beings. The fact of ownership implies utility, so that it is not necessary to include the word "utility" in the definition. Some writers include in their definition of wealth the idea of utility but omit the concept of ownership, but by doing so they include things which, although useful, are not ordinarily regarded as wealth, as, rain, the sun, air, and so on.

Money is that form of wealth in terms of which other forms of wealth are measured. Money must be carefully distinguished from wealth in general. Were money the only form of wealth, making money on the part of one person might necessarily involve losing it on the part of another. In reality making money simply means acquiring additional ownership of wealth and this may be accomplished by one person without necessary loss on the part of another. The amount of wealth in form of money is small compared with that in other forms. The amount of wealth in form of money is determined by the necessity of people for money just as the amount of wealth in form of houses is determined by the need people have for that form of wealth.

Prices are determined by the ratio of wealth in form of money to wealth in other forms. Assuming that no change in the method of conducting exchanges takes place, if the quantity of wealth in form of money increases more rapidly than that in other forms, money becomes relatively more abundant and prices rise. If the opposite is true, money becomes relatively scarce and prices fall. When prices are properly adjusted to the amount of money the absolute amount of money in existence is of little consequence.

Money is a convenience, but not an indispensable means of acquirin wealth. Wealth is acquired by fashioning iron, wood, etc., into useful forms not by increasing the quantity of money in circulation beyond an amoun sufficiently large to meet ordinary requirements. However, our moder complex society could not function without money.

Money as the essence of wealth was the concept upon which a school c economists known as **mercantilists** rested their theories. They believe that a nation, to be wealthy, should have an abundance of money. The regarded international trade as beneficial only if the amount of money re ceived exceeded that expended, and established policies intended to kee

[1] By permission of author and publisher, this section is adapted practically in its entiret from "Elementary Principles of Economics," by Professor Irving Fisher, published by th Macmillan Company. Professor Fisher's method of treatment indicates the close relatio ship which exists between accounting and economics.

money from being sent out of the country. A **favorable balance of trade** is still regarded by many as a factor in prosperity.

CLASSIFICATION OF WEALTH.—Wealth consists of **real estate** and **commodities.** Real estate consists of **land** and **land improvements.** Commodities are of endless variety—clothing, machinery, furniture, etc. Following is a brief outline of the forms of wealth:

I. Wealth

1. Real Estate
   - (a) Land
     - (1) Farm land
     - (2) Highways
     - (3) Building land
   - (b) Land improvements
     - (1) Buildings
     - (2) Drainage systems
     - (3) Embankments, etc.

2. Commodities
   - (a) Raw materials
     - (1) Mineral
     - (2) Agricultural
     - (3) In various stages of manufacture
   - (b) Goods in process
   - (c) Finished goods
     - (1) Consumable
     - (2) To be used to produce other goods

MEASURING WEALTH.—Wealth may be **measured** by units of **weight** or by units of **space.** Thus the pound is a unit of weight. Units of space may be of volume, area, or length. Such measures are applied in conjunction with qualitative or descriptive terms to afford a complete statement of essential information regarding any given homogeneous portion of wealth, as, 10 acres of meadow land, a pound of cane sugar, a quart of maple syrup, etc.

PRICE.—The price of any given kind of wealth is the quantity of any other kind of wealth which can be exchanged for one unit of it. Thus, if 100 bushels of corn exchange for \$50 in gold, the price of a unit of corn (bushel) is one-half of a gold dollar. Likewise, the price of a gold dollar is 2 bushels of corn. Price is usually indicated in terms of money because money is the commodity especially adapted to facilitate exchange. It is more acceptable in exchange, as a rule, than other forms of wealth for the reason that it can be exchanged readily for other forms of wealth.

Barter consists of exchange without the use of money as one of the forms of wealth exchanged.

VALUE.—The value of a given quantity of wealth is determined by multiplying the number of units of which it is composed by the price per unit. Thus if corn is worth one-half dollar per bushel, the value of 100 bushels is $100 \times \frac{1}{2}$, or \$50. Value, like price, may be expressed in terms of commodities other than money. By expressing value of all kinds of wealth in terms of money, we reduce them to a common basis of comparison. There is nothing absolute about value as thus expressed, and, in fact, relative values are constantly changing as the result of changes constantly taking place in production and consumption of all classes of commodities. Moreover, measurement of wealth is at best an approximation. The degree of accuracy attainable is often exaggerated. Quantitative measurements can be made with relative accuracy. The error in measuring value arises in attempting to determine what amount of wealth a measured unit represents. Frequently this is determined by **appraisal**, which is a more or less inaccurate attempt to ascertain what a thing should sell for. In case of staple commodities for which there is a regular market, reference may be had to current sales prices and the appraisal may be made within narrow limits of accuracy, say 1%. In case of real estate located in cities where sales

are being constantly made, an error of not more than 10% may be expected, whereas in out-of-the-way places appraisals are untrustworthy.

PROPERTY.—The fundamental attribute of wealth is its usefulness, i.e., the benefits which are derived from it. Such benefits may be in various forms other than mere receipt of money, but they are all measurable in money. The accuracy with which such benefits are measurable depends upon their nature. **Time** is usually an essential factor and it is customary in many instances to assume that benefit derived is in direct proportion to expiration of time, as when rentals are stated as so much per month. Enjoyment of benefits of wealth entails the **cost** of securing it and taking care of it. Costs are measured in terms of money, as is wealth. One who owns wealth possesses certain **rights,** which are simply rights to enjoy the benefits of wealth. It is the possession of these rights which constitute **property.** These property rights are not material things but are merely abstract relationships, which may be included under the term **ownership.** Since past benefits are expired, property consists only of rights to future benefits. Unencumbered ownership of wealth means the right to all its future benefits. Anything less than unencumbered ownership is called an

Table 1. Typical Cases Illustrating the Existence of Wealth Behind Property Rights

Name of Case	Wealth on which the Property Right is Based	Benefits of That Wealth	Description of Property Right	Certificate of Ownership, if any
Unencumbered	Farm	Yielding crops	Right to all use of farm forever	Deed
Partnership	Dry goods	Yielding profits from sale	One partner's "undivided" fractional interest	Articles of agreement
Joint Stock	Railway	Yielding profits	The shares of stock	Stock certificate
Street Franchise	Street	Use of same for passage, etc.	Right to run cars through it	Charter
Lease or Hire	Dwelling	Use of same for shelter, etc.	Right of tenant till fixed date	Lease
Railway Ticket	Railway	Transportation	Right to specified trip	Ticket
Railway Bond	Railway	Payment of "interest" and "principal'	Right to same and contingent right to foreclose	Bond certificate
Personal Note	All the possessions of the signer	Payments	Right to same and in default thereof right to collateral security	Note
Work due from Contract Labor	Workmen	Work	Right of employer to performance of same	Written contract

interest in wealth. The present value of the future benefits is their discounted worth. Where more than one party possesses an interest in ownership, the rights to future benefits are parceled out on some agreed basis. Property rights are frequently evidenced by written documents known as **certificates of ownership.** Examples are stock certificates, warehouse receipts, bonds, etc. The preceding Table 1 lists important forms of property rights, shows upon what form of wealth they are based, the benefits derived, nature of the property right, and evidence or certificate of ownership, if any.

Capital and Income

ACCOUNTING FOR CAPITAL.—Wealth may be considered as at a given time or it may be considered over a period of time. The former concept is static, whereas the latter is dynamic, because changes in amount and character of wealth occur only over periods of time. The concept of time involves the concept of a flow of values, as, for example, where purchases and sales are made over a year's period, where crops are brought to fruition, where minerals are converted to useful forms, etc. This conception of flow makes necessary the distinction between wealth as at a given point in time and the benefits derived from wealth over a period of time. Wealth at any given time is **capital.** The benefit derived therefrom over a period of time is **income.** The procedure necessary to distinguish capital from income is the fundamental problem in accounting. The capital of an individual at a given point in time is disclosed by a **balance sheet,** which is a statement showing the positive and negative elements of his wealth. His total assets constitute his **economic capital.** The difference between his total assets and his liabilities constitute his **accounting capital,** net worth, or proprietorship. In case of partnerships the ownership is split up among two or more individuals. In case of corporations the division of ownership is sometimes very great and is represented by certificates of ownership known as stock certificates.

The asset and liability items in a balance sheet undergo constant modification, with the result that the **accounting capital** changes also. Since accountants prefer usually to retain at its original figure the account showing accounting capital, a net increase in accounting capital is recorded in a **Surplus** account; a net decrease in a **Deficit** account. In case of corporations issuing shares of stock having a par value, there is additional reason for this procedure, in that the Capital Stock account represents the total par value of stock outstanding. Sometimes current gains are carried to an Undivided Profits account, so that capital may be distributed among three accounts—Original Invested Capital, Surplus, and Undivided Profits. Sometimes in case of corporations a recapitalization is effected, the nominal capital being increased or decreased, according to requirements. **Stock dividends** have become a familiar means of increasing the amount of outstanding stock. When the number of shares remains unchanged, their value nevertheless changes continually as surplus changes in amount.

Book value of stock is not usually the same as its market price, because the bookkeeper's valuation differs from that of the market. The bookeeper's valuation is based largely on cost, the market's valuation is based on prospective earning capacity.

Insolvency is a condition in which assets are not equal in amount to liabilities. Before such a status results the whole amount of accounting capital must be absorbed by losses. Since every line of business is subject to periods

of depression, there must be adequate capital to absorb any reasonable amount of losses. The percentage of capital to liabilities necessary to accomplish this varies greatly in different lines. It may be as high as 50% in some cases and as low as 5% in others. Inadequacy of capital is, perhaps, the most frequent cause of insolvency and consequent bankruptcy. As the relative amount of capital decreases, the risk of insolvency increases. **Technical insolvency** may result from failure to preserve correct proportions among current, working, and fixed assets even though from the point of view of the balance sheet as a whole the business is solvent.

COMMUNITY CAPITAL vs. INDIVIDUAL CAPITAL.—Having found the net capital of each member of a community, the net capital of the community is found by combining the net capital of the members. The same result may be achieved by canceling each asset item of the community against an equal liability item. These are known as the method of **balances** and the method of **couples,** respectively.

Illustration.—The following are the balance sheets of three persons, A, B, and C:

Balance Sheet of A

C's note	$ 40,000	Note held by B	$ 30,000
Real estate	65,000	Capital	155,000
Bonds	80,000		
			$185,000
	$185,000		

Balance Sheet of B

A's note	$ 30,000	Mortgage held by C	$ 25,000
Real estate	50,000	Capital	75,000
Shares of stock	20,000		
			$100,000
	$100,000		

Balance Sheet of C

B's mortgage	$ 25,000	Note held by A	$ 40,000
Store	40,000	Capital	40,000
Personal property	15,000		
			$ 80,000
	$ 80,000		

By adding together the capital accounts of A, B, and C, the total capital is obtained by the method of balances. By canceling the items which appear twice, i.e., as asset and as liability items, the same result is secured by the method of couples. The results of both methods are summarized thus:

Method of Balances		Method of Couples	
A's capital	$155,000	Real estate	$115,000
B's capital	75,000	Bonds	80,000
C's capital	40,000	Shares of stock	20,000
		Store	40,000
	$270,000	Personal property	15,000
			$270,000

The method of balances shows capital shares of each individual. The method of couples shows the amount of each kind of capital asset.

There are among the capital assets thus shown, two items representing certificates of ownership, viz., "bonds" and "shares of stock." Assume that these are both securities of Corporation D, whose balance sheet is as follows:

Ba'ance Sheet of Corporation D

Factory	$100,000	Bonds held by A	$ 80,000
		Stock held by B	20,000
	$100,000		$100,000

By the method of couples we now have for all four balance sheets:

Real estate	$115,000
Factory	100,000
Store	40,000
Personal property	15,000
	$270,000

By the process of combination all debts are eliminated and a true statement of the combined wealth represented by the four balance sheets is secured. By combining all balance sheets in which assets on certain ones are liabilities on certain others, this result is secured. The procedure is analogous to that of consolidating the balance sheets of affiliated companies, all intercompany obligations being eliminated. It may be described as substitution of the thing itself for the evidence of ownership thereof. Taking all balance sheets together, it is evident that wealth stated therein in the form of **rights** to wealth constitutes a duplication, because the actual property to which such rights refer is listed as assets on other balance sheets. If balance sheets were obtainable for all real and fictitious persons, thus including all assets and liabilities, it would be possible to secure, by using the method of balances, a complete statement of actual wealth. All representatives of wealth such as stocks, bonds, notes, etc., would be eliminated; only the actual property in form of cash, buildings, merchandise, etc., would be included. The fact that such rights to property are not in themselves wealth does not mean that they are not of great usefulness in making wealth more effective than it would otherwise be.

The general scheme of the industrial world as it is now constituted, is such that by means of **credit** certain classes of people control much more wealth than they own. Credit results in the duplication above mentioned. In itself it does not result in an increase of the world's capital, although it may indirectly cause its increase by stimulating more effective combinations of wealth.

When both the actual wealth and the representative forms of wealth are taxed, the result is **double taxation.** Any just scheme of taxation must take this situation into consideration. Likewise any attempt at placing a valuation upon the combined wealth of a community should allow for all such duplications.

ACCOUNTING FOR INCOME.—Income is the flow of benefits derived from wealth over a period of time. These benefits need not be in form of money, although it has become customary to measure them in terms of

money. Usually the benefits of property owned by an individual are sold for money, which he in turn uses to buy what he needs for the satisfaction of his wants. Thus a farmer's income in the form of crops is more than he requires for the sustenance of himself and family, so he sells a portion of it and uses the proceeds to buy clothing and other useful commodities, or perhaps adds a part of it to his capital, thus increasing his future income. In some cases the income is less obvious, although just as real, than in other cases. Thus the income from a house is more obvious when it is rented at a fixed monthly rental received in money than when the owner occupies it and receives his income in the form of shelter, although the latter is as much a flow of benefits as the former.

Since income is a flow of benefits it can occur only over a period of time. This brings out the distinction between capital and income, viz., that whereas capital is a fund existing at a given instant, income is a flow of benefits extending over time.

Since income can be measured in terms of dollars and cents it can be accounted for. Revenue constitutes positive income. Expenses constitute negative income or outgo. Expenses are almost always necessary to the creation of income. Expenses or costs are measurable in terms of money and can therefore be accounted for. They need not, however, consist of money or even involve its disbursement. Total income (revenue) attributable to a given division of capital, minus total outgo (expense) attributable to the same capital, gives net income attributable to that capital.

Illustration.—A owns a factory in which he has invested $20,000. During a given year his revenue amounts to $8,000 and his expenditures to $4,000, as follows: fuel $1,000, labor $1,200, repairs $200, depreciation $800, salaries $800. In account form this is stated as follows:

Income Account

Fuel	$1,000	Sales	$8,000
Labor	1,200		
Repairs	200		
Depreciation	800		
Salaries	800		
Balance, Net Income	4,000		
	$8,000		$8,000

The item **depreciation** represents the estimated depreciation on factory building and machinery, which cost originally $16,000 and has an estimated average life of 20 years, so that 5%, or $800, represents the annual depreciation expense, straight-line method, assuming that the plant has no scrap value at the end of the 20-year period. Another way to care for depreciation is to consider it as an expense only when replacement takes place, ignoring it in the intervening years. But the effect of such a policy is to burden the year in which such replacement is made with more than its proper share of expense. This is illustrated in the following chart (Fig. 1), which shows graphically the income accounts of A for a period of 14 years. The entire space above the horizontal line represents revenue; that below represents expense. In the first year shown revenue exceeds expense by the amount represented by space *a*. In the second, expense exceeds revenue by the amount represented by space *b*. It is in this year that the replacement is made, the whole cost of replacement being charged to expense. The following years

show a fairly uniform rate of excess of revenues over expenses. The trouble is that, whereas normally a surplus is shown, in one year out of each 20 (assuming that a replacement must be made every 20 years) a large deficit results due to charging the cost of replacement to expense.

To prevent this uneven distribution of costs, a **reserve for depreciation** is employed, the cost of construction of the building being in the first instance capitalized and the expense resulting from its depreciation being charged to Profit and Loss in 20 instalments (equal or otherwise according to the method of writing off depreciation followed) and reserve for depreciation being credited. According to this plan, when the time arrives to make the replacement, either the original cost of the building replaced or an equal amount of the cost of replacement may be charged, not against Profit and Loss but against the reserve for depreciation thus accumulated. As a consequence the depreciation expense is distributed over the period representing the life of the building, each year bearing its share of the expense. In the diagram below, under this plan, year number 2 would not be charged with

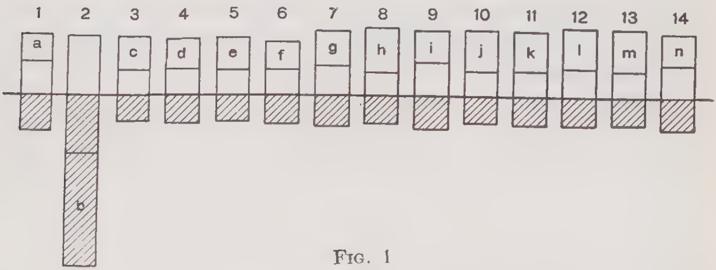


FIG. 1

a disproportionate share of expense, but instead each year, except the second, would show a somewhat larger shaded area, the increase being represented by 1/20 of the total depreciation cost for the 20-year period.

As the number and variety of capital assets increase, the irregularity in net income resulting from charging replacements direct to Profit and Loss decreases, because in such case replacements become more and more evenly distributed as the variety and number of depreciating assets increase. Thus if, in the above illustration, twenty houses instead of one are owned, and they have been constructed so that one is replaced each year, the need of a depreciation reserve to equalize profits is greatly lessened.

A man's total income is the combined income from all the capital he owns. Theoretically, it is possible to set up a separate income account for each item of his capital, debits being entered for all costs and credits for all gains or benefits applicable to each such item. The difference between costs and benefits applicable to any item of capital is the net income or deficit applicable to it. By considering costs and benefits applicable to all items of his capital, his total net income is determined.

Fundamentally, only real persons have net incomes. Fictitious persons do not have net incomes because the so-called net capital of fictitious persons is really a liability to real persons who are stockholders. The net income is really that of the stockholders who receive the benefits of which such net income consists.

OMISSIONS AND ERRORS IN PRACTICE.—Individuals, when accounting for their incomes, omit from their capital accounts their own persons because free human beings are not ordinarily regarded as wealth; but in their income accounts they enter their earnings. Again, individuals enter their dwellings in their asset accounts but do not enter the income derived therefrom, in form of shelter, in their income accounts.

Mere receipts and disbursements of money are sometimes confused with income and expense. Only under certain circumstances does accounting for money income and outgo give a fairly true picture of income and expense, viz., when all income and outgo are in form of money. Generally, however, money income is an unsafe indicator of real income.

COMBINING INCOME ACCOUNTS.—It is possible to ascertain the income of society by combining all income accounts, just as it is possible to ascertain society's capital by combining all balance sheets, as shown above. There are two ways of accomplishing this, viz., the methods of **balances,** and of **couples,** these corresponding to the methods employed to combine balance sheets.

By the method of balances it is necessary simply to make up the income accounts of all persons for a given period so that society's total income is included. The net balances added together give society's total net income for the period in question.

The method of couples is based on the fact that there are self-canceling or offsetting items in income accounts, just as there are in balance sheets. This is true because an item which represents a cost in one income account often represents a benefit in another income account. Thus, if a plumber repairs a house the charge for services made to the owner represents income to the plumber, whereas to the owner it represents outgo or expense. In fact, the business world is continually engaged in passing on services from hand to hand, but with this important qualification, viz., that between the original effort to give utility to something and the final stage in which somebody gets the benefit from that original effort there are frequently many stages. Throughout this process, which begins by the creation of utility through somebody's effort and finally ends in giving a satisfaction or a benefit, there is a series of exchanges or **interactions** having both a positive, or benefit side and a negative, or expense side. The only benefits which do not have a corresponding negative side are those which take the form of **consumption.** The only costs which do not have a corresponding benefit side are the labor and trouble or original creation. Labor and trouble on the one hand and satisfactions on the other are the outer edges or limits of a chain of productive processes, each link of which has a positive, or benefit side and a negative, or cost side, the two in each case canceling or offsetting each other.

PRODUCTION, TRANSPORTATION, AND EXCHANGE.—The interactions mentioned above are of three chief kinds:

1. Those which change the form of wealth.
2. Those which change the position of wealth.
3. Those which change the ownership of wealth.

The first type of interaction is equivalent to what is ordinarily known as **production,** although all three processes really constitute parts of the productive process. It includes manufacture and agriculture. As a rule, production consists of a series of stages, each representing an interaction. The finished product of one stage becomes the raw material of the next. Each

operation is a credit to the groups of instruments earlier in the series and a debit to the group next later in the series.

The second group of interactions is termed **transportation.** The distinction between transportation and production in the narrower sense is that, whereas production consists in changing the position of the parts as related to one another, transportation consists in changing the position of wealth as a whole. Transportation also consists of a series of canceling interactions. Thus, when merchandise is transported between merchants it becomes a debit to the one who receives it and a credit to the one who transmits it.

The third group of interactions constitutes **exchange.** This is also a form of interaction as between parties. An exchange usually takes the form of a pair of interactions, two commodities being transferred in opposite directions between owners. An exchange consists of two transfers, each of which is a self-canceling interaction. It follows that each exchange is self-canceling and so does not form a part of society's income. A commodity may undergo a series of exchanges, each self-canceling, so that no income results until it comes into the hands of the ultimate consumer who is the first and only one to derive service or benefits from it.

It must be borne in mind that in speaking of income, society's income, as distinguished from the income of individuals, is meant. The owner of a forest may by selling it derive income but society derives no income from the transfer because the purchaser surrenders a sum equal to that which the buyer receives. The income of society consists only of the benefits or satisfactions derived from consumption.

Although interactions are self-canceling it does not follow that they are useless. They are steps in the achievement of the final income, although they cancel out under the method of couples.

Society's income and outgo never take the form of money, but always of benefits on the one hand and of effort or work on the other. Capital is not for the purpose of making money but to aid production, transportation, and exchange, and thus make society's income greater than it would otherwise be. Many so-called costs of production are in reality self-canceling interactions, not costs in the absolute sense. Expenses paid for in money are of this type. The money paid for wages, rent, materials, etc., although costs to the person making the disbursement, are incomes to other people. "The wages are the earnings of labor; the payment for raw material is received by some other manufacturer, farmer, or miner; the rent is received by the landlord; the interest charges, by the creditor. Labor itself—human effort, not the payment for it—remains, however, uncanceled."

INTERACTIONS OF PRODUCTION ILLUSTRATED.—Not only all money transactions but a great majority of the natural benefits of capital cancel out. This is illustrated in case of a forest from which logs, lumber, furniture, etc., are produced. The gross income produced by the forest consists of logs, but production of logs is merely an intermediate stage, because the logs are in turn debited to the sawmill. The sawmill makes lumber of the logs, the lumber representing the gross income of the mill. The lumber is in turn debited to a warehouse when it is used for repairing it. But the warehouse represents merely an intermediate stage because it is used for storing cloth; thus the cost of the lumber produces income which in turn represents cost to the tailor who buys the cloth. The tailor secures income when he sells a suit of clothes, but this is canceled by the cost of the suit to his customer. The only uncanceled element is the income which the customer receives when he wears the suit and thus secures benefits from it.

Table 2. Society's Income Account

Capital Source	Outgo		Income	
Logging camp			Yielding logs to sawmill	$ 50,000
Sawmill	Receiving logs from logging camp	$ 50,000	Yielding lumber to lumber yard	60,000
Lumber yard	Receiving lumber from sawmill	60,000	Yielding lumber to warehouse	70,000
Warehouse	Receiving lumber from lumber yard	70,000	Warehouse shelter to cloth	80,000
Stock of cloth in warehouse	Shelter from warehouse	80,000	Yielding cloth to tailor	90,000
Stock of cloth of tailor	Receiving cloth from warehouse stock	90,000	Yielding suits to customers	500,000
Stock of clothes of customers	Receiving suits from tailor's stock	500,000	Yielding "wear"	600,000

These various transformations and cancellations are set out in Table 2, which is an income account showing how society derives its income from the forest.

Note the successive cancellation of items. An item on the right is the positive side of an interaction of which the item on the left in the line next below is the negative side. Ultimately, the only surviving item is the "wear" of the suits which represents society's only income from the various stages or interactions. A study of this income account shows that, as regards a certain group of capital goods, such as is described in the first column of the above income account, what is income for one division of capital becomes outgo for another. The $90,000 received when cloth is sold to the tailor represents income for the first five capital groups but not for the sixth capital group—stock of cloth of tailor—for which it represents outgo. In other words, income is always relative to its source. Tables 3, 4 show how the various interactions cancel by the method of balances and the method of couples.

Table 3. Method of Balances

Capital	Outgo	Income	Net Income
Logging camp	....	$ 50,000	$ 50,000
Sawmill	$ 50,000	60,000	10,000
Lumber yard	60,000	70,000	10,000
Warehouse	70,000	80,000	10,000
Stock of cloth in warehouse	80,000	90,000	10,000
Stock of cloth of tailor	90,000	500,000	410,000
Stock of clothes of customers	500,000	600,000	100,000
			$600,000

Table 4. Method of Couples

Income	Outgo
$ ~~50,000~~	
~~60,000~~	~~$ 50,000~~
~~70,000~~	~~60,000~~
~~80,000~~	~~70,000~~
~~90,000~~	~~80,000~~
~~500,000~~	~~90,000~~
600,000	~~500,000~~

By the **method of balances** we determine the amount of income contributed by each capital group. By the **method of couples** we determine society's income in form of service or "wear," but the amounts contributed by the different capital groups are not shown.

The accounting for income by the methods of balances and of couples is analogous to the accounting for capital by these two methods. In accounting for capital the method of balances gives the amount of capital belonging to each individual, whereas the method of couples gives the elements of which total capital consists. In accounting for income the method of balances gives the amounts of income contributed by each capital group, whereas the method of couples shows of what the resulting income consists. In capital accounting the canceling items are **debts.** In income accounting they are **interactions.** Both debts and interactions are self-canceling because they possess both positive and negative sides. Their presence in balance sheets and income accounts is due to double counting, the same debt or interaction being enumerated as both a positive and a negative item.

The fact that these items are self-canceling does not mean that society's total income would be the same were there no debts or interactions. Both are important factors in the creation of additional capital and income.

TRUE COSTS AND INCOME.—From the foregoing it is evident that most of what is termed **cost of production** is not cost. All payments between persons are only cancellations, not costs. Labor or effort is the only ultimate cost. Satisfactions or benefits are the only ultimate income. Between efforts and satisfaction a small or large number of interactions may intervene, depending upon the complexity of the social and industrial organization.

It also follows that much that is termed wealth and income really consists of items which are canceled by other items. Stocks and bonds are of this type. All money salaries and wages are also of this type. A man's real income is the living he gets, and society's income is the total of the benefits enjoyed by its members. Likewise, society's capital is that which exists after all contra items on the balance sheets of its members are canceled. It is only by the application of the method of couples that interactions in society's income account and offsetting items in society's balance sheet are eliminated and society's true income and capital are determined.

RELATION BETWEEN CAPITAL AND INCOME.—The connecting link between capital and income, i.e., the factor which enables us to calculate capital when income is given, is the **rate of interest.** The rate of interest is the **ratio** between income and capital when both are expressed in terms of money. Thus, if a man is willing to pay $600 per year perpetually for the use of $10,000 worth of capital the ratio is 6/100, or 6%.

Another way of defining the rate of interest is to call it the premium on present goods as related to the same goods when they cannot come into our possession until 1 year hence. In an exchange of equivalent present and future goods, present goods are always at a premium; and when the future goods will come into our possession 1 year hence this premium equals the rate of interest. If $100 in present goods exchange for $106 of goods deliverable 1 year hence, the rate of interest is 6%.

The rate of interest enables us to translate present money value into future money value, and vice versa. Thus to translate present value into values of a year hence, we multiply present value by 1 plus the rate of interest, or 1.06, which is known as the **ratio of increase.** If, on the contrary, we wish to translate values of a year hence into present values, we divide by 1.06.

Interest is earned not only by money but by all other forms of wealth.

In economics the chief problem in interest consists in translating future into present values—in other words, finding the value of capital. This is

true because the value of capital is derived from the value of the income produced by it, and only when we know what income a given quantity of capital will produce can we determine the value of that capital. Moreover, to enable us to determine such value with a fair degree of accuracy we must know not only what income the capital will produce this year and next year, but throughout its future useful life, as well as the rate of interest to employ in discounting future income.

For purposes of illustration, we may assume that both future income and rate of interest are known with certainty. These being the conditions, capital value may be computed accurately.

If future income consists of \$1 **due 1 year hence** and the rate of interest is 6%, the present value of \$1 due 1 year hence is $\$1 \div 1.06$, or \$0.943.

If future income consists of two instalments of \$1 each, **due** respectively **1 and 2 years hence,** it is necessary to consider compound interest. One dollar amounts, in 1 year, to \$1.06, and in 2 years to $\$1.06 \times 1.06$, or \$1.1236. It follows that \$1 due 2 years hence is worth at present $\$1 \div 1.1236$, or \$0.889, which added to the present value of \$1 due 1 year hence, gives the present value of these to future instalments, viz., \$1.832.

Similarly the present worth of a sum **due 3 years hence** is found by dividing it by 1.06^3, the present value of a sum **due 4 years hence** is found by dividing it by 1.06^4, and so on.

In determining present value we have to deal either with one future sum, or with a series of future sums, usually the latter. Thus the valuation of a bond involves the valuation of a series of future income items, and that of the principal sum due a given number of periods hence.

When the rate of interest employed in valuing a bond is the same as the coupon rate, the present value is equal to the par value of the bond. If the rate of interest employed is less than the coupon rate, the value of the bond is above par. If it is greater than the coupon rate, the value of the bond is below par.

Since value is a function of the rate of interest, it is evident that changing interest rates exert a direct influence on values, increases in the interest rate being accompanied by decreases in capital values, and vice versa. Different parts of capital are affected differently by changing rates accordingly as the income derived from it is derived in the near or in the remote future. The various effects resulting from the varying remoteness of incomes are shown in Table 5.

Lowering the interest rate results in a general increase in capital values, but the increase varies greatly for different articles. The more enduring parts of capital are affected most. In case of land, possessing infinite durability, halving the interest rate results in a doubling of values. At the other extreme of the scale, the price of bread remains unchanged. A high rate of interest diminishes the attractiveness of income of the remote future as compared with that of the near future.

INTEREST ACCRUED AND INCOME TAKEN OUT.—The increase in capital value is due to the accumulation of interest; its decrease is due to the taking out of income, income being considered in the sense of benefits or satisfactions received by individuals. When the accumulation of interest just equals the income taken out, capital remains at its original amount. If the income taken out exceeds interest accumulated, capital value is impaired; if income taken out is less than interest accumulated, capital value is increased. The principle may be stated as follows:

1. If a property yields a specific income which is known beforehand

Table 5

Capital	Rate of Net Income Per Year	Total Income	Capital Value (Int. at 5%)	Capital Value (Int. at $2\frac{1}{2}$%)
Land	$1,000 per yr. Forever —	Infinite	$20,000.00	$40,000.00
House	$1,000 per yr. For 50 yr.—	$50,000.00	18,300.00	28,400.00
Horse	$100 per yr. For 6 yr. —	600.00	508.00	551.00
Suit of clothes	$20 1st yr., $10 2nd yr.	30.00	28.00	29.00
Loaf of bread	$36.50 per yr. For 1 day —	.10	.10	.10

Table 6

Capital Wealth	Income Taken Out Per Year	Capital Value (Int. at 5%)	Interest Accrued for 1st Year	Increase (+) or Decrease (−) of Capital Value in 1st Year	Ratio of 1st Year's Income to Original Capital Value
Forest land	$1,000 a yr. for 14 yrs., and then $3,000 a year forever	$40,000.00	$2,000.00	+$1,000.00	2.5
Farm land	$1,000 a yr. forever	20,000.00	1,000.00	0.00	5.0
House	$1,000 a yr., for 50 yrs.	18,300.00	915.00	− 85.00	5.4
Horse	$100 a yr., for 6 yrs.	508.00	25.40	− 74.60	19.6
Suit of clothes	$20 1st yr. $10 2nd yr.	28.00	1.40	− 18.60	71.4

and the value of that property is found by discounting this income at a certain rate of interest, if income taken out equals the interest accrued, the value of the capital will be restored each year to the level of the year before.

2. If income taken out exceeds interest accrued, capital value falls below that of the preceding year, the fall equaling in amount the excess of income taken out over interest accrued.

3. If income taken out is less than interest accrued, capital value rises above that of the preceding year, the rise equaling in amount the excess of interest accrued over income taken out.

Table 6 gives income assumed to be taken from five kinds of capital wealth, capital value determined by discounting that income at 5%, interest accrued for 1st year, resulting change in capital value, and ratio of 1st year's income to original capital value.

1. The **forest land** yields $1,000 income the 1st year on a capital value of $40,000, from which, on the 5% basis assumed, the interest accrued is 5% of $40,000, or $2,000. Income taken out is less than interest accrued ($2,000) by $1,000. Therefore, the forest appreciates in the year by the excess, $2,000 − $1,000, or $1,000, and is worth $41,000 at end of the year. It continues appreciating for 14 years, when it is worth $60,000. After that income taken out annually ($3,000) is equal to annual accrued interest on $60,000.

2. The **farm land,** yielding $1,000 yearly in perpetuity, is, on a 5% basis, worth $20,000, and continues to be worth that amount. Income taken out ($1,000) always equals interest accrued from $20,000.

3. The **house** yields the 1st year a $1,000 income on a capital value of only $18,300. Interest accrued on $18,300 is 5% thereof, or $915. Consequently there results an excess of income taken out over interest accrued, $1,000 − $915, or $85, and a corresponding fall of $85 in value of capital. In other words, the house depreciates $85 the 1st year. It continues to depreciate each year until its value vanishes at the end of 50 years.

4. The **horse** depreciates rapidly. Its owner realizes an income of $100 on a capital value of $508, from which interest accrued would be only $25.40. The difference between income taken out and interest accrued is $100 − $25.40, or $74.60. The horse loses that much in value during the year and continues to depreciate for 6 years.

5. The **suit of clothes** yields $20 income the 1st year on a capital of $28, from which interest accrued is only $1.40. It depreciates by the difference, $20 − $1.40, or $18.60.

In all cases interest accrued is 5% of capital value, whereas income taken out may be a higher or a lower percentage. Expressed in percentages the actual rate of value return (i.e., ratio of income taken out to capital) on forest land is 2.5%; on farm land, 5%; on the house, 5.4%; on the horse, 19.6%; and on the suit of clothes, 71.4%. If the rate of value return exceeds the interest rate capital is decreased. The house yields a rate of return only slightly higher than the rate of interest, and lasts 50 years. The horse yields a rate of return nearly 4 times the rate of interest, but lasts only 6 years. The clothes yield a rate of return over 14 times the rate of interest, but last only 2 years.

The above illustrations emphasize **two concepts,** viz., income taken out and interest accrued.

Interest accrued is the income which, if taken out, serves to maintain capital intact, neither increasing nor decreasing it.

Income taken out decreases capital, increases it, or causes its amount to remain stationary accordingly as it is greater, less than, or equal to interest accrued. It is a fundamental concept, for upon its understanding depends the understanding of capital preservation. Increase of capital resulting from an excess of interest accrued over income taken out is termed **savings.**

The **four concepts** involved in a discussion of capital and income are:

1. Income taken out.
2. Capital value (discounted value of expected income to be taken out).
3. Interest accrued.
4. Appreciation, or excess of interest accrued over income taken out, and its opposite, depreciation, or excess of income taken out over interest accrued.

Purchasing Power of Money

PRINCIPLES WHICH DETERMINE PRICES.—Since prices are expressed in money, the willingness to receive or surrender a certain quantity of goods at a specified price in money depends on the willingness to give or receive a specified amount of money in exchange. This willingness depends on the purchasing power of money. When the purchasing power of money is high, an individual has so high a regard for it that he is willing to exchange a comparatively large quantity of goods for a given amount of it, which means that the price of goods is low and that of money high.

When the price of money is high, the prices of articles in general are low and the money price of every particular commodity depends partly on prices of other commodities, or on the general level of prices.

Purchasing power of money and **general level of prices** are reciprocal expressions, for to say that the purchasing power of money is high is equivalent to saying that the general level of prices is low, and vice versa.

Money consists of goods generally acceptable in exchange for other goods. This acceptability in exchange is its chief characteristic. When this acceptability is legalized money becomes **legal tender,** but this feature is not essential.

The feature which, in the first instance, makes a commodity acceptable as money is its very ready salability. Gold and silver are such commodities, especially gold, and for this reason it has become the most important form of money. An example of a commodity possessing a low degree of salability is real estate. Between this and gold are a great variety of commodities possessing varying degrees of salability.

Currency is any kind of goods which, whether generally acceptable or not, serves as means of exchange. The **two chief classes of currency** are: (1) money, and (2) bank deposits.

Bank deposits serve as a means of payment through the agency of **checks,** which serve as evidences of transfer of deposits. Although checks are acceptable only by consent of payee, they serve as a medium of exchange to a greater extent than does money. The fact that checks are acceptable only by special consent of the payee distinguishes them from real money which the payee accepts without question.

Real money consists of two classes, **primary** and **fiduciary.**

Primary money is money which has as much value as a commodity as it has as money.

Fiduciary money is that the value of which depends partly or entirely on the owner's confidence that it can be exchanged at any time for primary money or can be used at any time to discharge debts. Silver dollars are fiduciary money because the silver they contain is worth intrinsically less than a dollar. Bank notes are also fiduciary money, the material of which they are made being worth but a fraction of a cent. In the United States the greater part of money in use is fiduciary, the chief kinds being silver dollars, fractional silver, minor coins, silver certificates, gold certificates, government notes or "greenbacks," and bank notes.

The **chief qualities of primary money** are portability, durability, and divisibility.

The **chief quality of fiduciary money** is its redeemability in primary money, or else its imposed quality of "legal tender."

Gold coin is the only primary money in the United States.

EXCHANGE.—Exchange consists of three types:

1. Exchange of goods for goods, or **barter.**
2. Exchange of money for money, or **changing money.**
3. Exchange of money against goods, or **purchase and sale.**

The third type of exchange alone involves the **circulation of money,** which is simply the aggregate amount of money transfers against goods.

EQUATION OF EXCHANGE.—The price level, if we ignore the influence of checks, depends on three influences:

1. Quantity of money in circulation.
2. Velocity of circulation (average yearly turnover of money).
3. Volume of trade (amount of goods bought with money during one year).

The equation of exchange is the mathematical expression of the total volume of transactions effected during a given period in a given community. It represents the sum of the equations of exchange for all individual transactions occurring during such period.

Thus, if 5 bushels of wheat be purchased for \$10, we may say that \$10 = 5 bushels of wheat multiplied by \$2 a bushel. All other transactions may be expressed similarly. By adding all resulting equations together the equation of exchange for the given period and community is obtained. The left side of this equation represents all money spent; the right side represents the value of goods bought during the period. This left side is greater than the amount of money in circulation if the same money serves for more than one transaction during the given period.

The equation has a **goods side** and a **money side.** The money side is the total money exchanged. It is the product of quantity of money multiplied by its rapidity of circulation or turnover—the number of times it is exchanged for goods during the period. **Velocity of circulation** is found by dividing the total money payments for goods during the period by the average amount of money in circulation and used to effect such payments.

If, for example, there are \$10,000,000 in circulation and their velocity or turnover is 20 times a year, the total transactions amount to 20× \$10,000,000, or \$200,000,000. This is the **money side** of the equation.

The goods side must also be \$200,000,000, since that amount of purchases is made. Assume that there are only three kinds of goods, viz., bread, coal, and cloth, and that the sales of these are as follows:

400,000,000 loaves bread	@	$0.10	per loaf
20,000,000 tons coal	@	5.00	per ton
60,000,000 yards cloth	@	1.00	per yard

The total of these transactions is $200,000,000, i.e.,

$40,000,000 worth of bread
$100,000,000 worth of coal
$60,000,000 worth of cloth

and the equation of exchange is

$$\$10{,}000{,}000 \times 20 = \begin{array}{l} 400{,}000{,}000 \text{ loaves} \times \$0.10 \text{ a loaf} \\ 20{,}000{,}000 \text{ tons} \times 5.00 \text{ a ton} \\ 60{,}000{,}000 \text{ yards} \times 1.00 \text{ a yard} \end{array}$$

On the **money side** of this equation there are two magnitudes:

1. Quantity of money
2. Turnover velocity per year

On the **goods side** there are two groups of magnitudes in two columns:

1. Quantities of goods (loaves, tons, yards) exchanged in a year.
2. Prices of these goods.

It is evident that **prices** must bear a definite relationship to the other magnitudes—quantity of money, its turnover, and quantities of goods sold. As a whole, they must vary proportionally with the quantity of money and its turnover, but inversely with the quantity of goods exchanged.

Thus, if quantity of money is doubled while its rapidity of turnover and quantity of purchases are not altered, the equation of exchange still holding, it is evident that prices generally must be doubled. Of course the rise of individual prices need not be uniform. It is only in case the rise of prices is even that they will all be exactly doubled. In case of such an even rise of prices the above equation becomes:

$$\$20{,}000{,}000 \times 20 = \begin{array}{l} 400{,}000{,}000 \text{ loaves} \times \$0.20 \text{ a loaf} \\ 20{,}000{,}000 \text{ tons} \times 10.00 \text{ a ton} \\ 60{,}000{,}000 \text{ yards} \times 2.00 \text{ a yard} \end{array}$$

If prices rise unevenly, as would ordinarily be true in an actual case, prices which more than double would be compensated by other prices which do not double themselves. The only requirement necessary to fulfil the equation is that prices be doubled **on the average.**

The **conclusion** to be drawn from the above is that the level of prices must rise or fall with changes in quantity of money, unless changes also occur in velocity of circulation or in quantities of goods exchanged.

Just as changes in quantity of money affect prices, so changes in other terms of the equation affect prices. Thus an increase in velocity of circulation has an effect similar to an increase in quantity of money. If, in the above equation, turnover of money doubles whereas its quantity remains unchanged, the equation becomes:

$$\$10{,}000{,}000 \times 40 = \begin{array}{l} 400{,}000{,}000 \text{ loaves} \times \$0.20 \text{ a loaf} \\ 20{,}000{,}000 \text{ tons} \times 10.00 \text{ a ton} \\ 60{,}000{,}000 \text{ yards} \times 2.00 \text{ a yard} \end{array}$$

or some prices will be more than and others less than doubled.

If quantity of goods is doubled prices will be halved, thus:

$$\$10{,}000{,}000 \times 20 = \begin{array}{l} 800{,}000{,}000 \text{ loaves} \times \$0.05 \text{ a loaf} \\ 40{,}000{,}000 \text{ tons} \times 2.50 \text{ a ton} \\ 120{,}000{,}000 \text{ yards} \times 0.50 \text{ a yard} \end{array}$$

or some prices will be more than and others less than halved.

If there is a change in two or three of the terms of the equation at the same time, the price level is the **resultant** of these changes. It is for this reason that the doubling of the quantity of money does not necessarily result in the doubling of prices.

GRAPHIC ILLUSTRATION OF EQUATION OF EXCHANGE.—Fig. 2 shows a mechanical balance in equilibrium. One side symbolizes the money side of the equation; the other side symbolizes the goods side. The weight at the left, symbolized by a purse, represents money in circulation. The distance of the purse from the fulcrum represents turnover or velocity of circulation of money. The weight multiplied by this leverage is equal to corresponding products on opposite side. On the opposite side are three weights which represent bread, coal, and cloth, and are symbolized as shown. The distance of each from the fulcrum is its price. To prevent leverages at right from being too long, the unit of measure of coal is reduced from tons to hundredweights, and that of cloth from yards to feet, while the number of units are correspondingly enlarged. The measure of coal is changed from 10,000,000 tons to 200,000,000 hundredweight; that of cloth from 30,000,000 yards to 90,000,000 feet. In these units coal becomes 25 cents per hundredweight; that of cloth becomes 33⅓ cents per foot.

If the purse becomes heavier, to retain the balance some of the weights at the right must either be heavier or they must be moved farther to the right, or else the purse must be moved to the right.

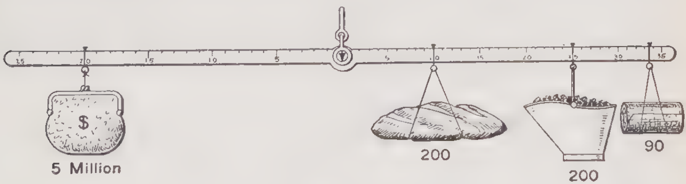


Fig. 2

Assume that the last and first of these three changes do not occur; then the middle one must occur. That is, if position of purse is unaltered (equivalent to saying that velocity of circulation of money remains unchanged) and if weights at right remain unaltered (equivalent to saying that trade remains unchanged), then some or all of the weights must move to the right (equivalent to saying that prices of goods must increase). If prices increase uniformly, they must increase in the same ratio as the money does. If they do not increase uniformly, some must increase more and some less to keep the average increase in the same ratio.

Again, if velocity of circulation increases (equivalent to lengthening the leverage to the left) and if money in circulation (purse) and trade (weights at right) remain the same, prices must increase (equivalent to lengthening of leverage at right).

Again, if volume of trade increases (increase in weights at right), and if velocity of circulation of money (left leverage) and quantity of money (left weight) remain unchanged, prices must decrease (equivalent to saying that left leverages must shorten).

In general, any change in one of the four sets of magnitudes must be accompanied by such change or changes in one or more of the other three as will maintain equilibrium.

ALGEBRAIC EXPRESSION OF EQUATION OF EXCHANGE.—Assume that

M = money in circulation
V = velocity of circulation
p, p', p'', etc. = prices of various goods
Q, Q', Q'', etc. = quantities of those goods sold

Then the formula of the equation of exchange is expressed thus:

$$\begin{aligned} MV = {} & pQ \\ & + p'Q' \\ & + p''Q'' \\ & + \text{etc.} \end{aligned}$$

MV represents amount of money spent for goods during the year, while pQ, $p'Q'$, etc., represent values of goods bought.

If M is doubled (V and Q's remaining unchanged), the p's will be doubled.

If V is doubled (M and Q's remaining unchanged), the p's will also be doubled.

If Q's are doubled (M and V remaining unchanged), the p's will be halved.

The right side of the equation is the sum of terms of the form pQ—prices multiplied by quantities. The sum may be expressed by using the Greek "Σ," which means, in mathematics, "the sum of." The equation may then be expressed thus:

$$MV = \Sigma pQ$$

Again, if P is the weighted average of all p's, and T the sum of all Q's, the equation may be expressed thus:

$$MV = PT$$

QUANTITY THEORY OF MONEY.—From the foregoing principles we are able to state that the price level varies:

1. Directly as the quantity of money in circulation (M).
2. Directly as the velocity of its circulation (V).
3. Inversely as the volume of trade done by it (T).

The first statement above constitutes the quantity theory of money. The following four illustrations show the four most important ways in which the number of dollars in circulation may be changed.

Illustration No. 1.—The government doubles the denominations of all money, half-dollars being called dollars, etc. This doubles the number of dollars in circulation, and the price level will be doubled, each person paying twice as many dollars for the same commodities as before.

Illustration No. 2.—The government cuts each dollar in two, coining the halves into new dollars. It recalls all paper notes, replacing them with double the orginal number, two new ones for each old one. Prices will be doubled as a result, as in the preceding illustration.

Illustration No. 3.—The government duplicates each piece of money and presents the duplicate to the possessor of the original. Prices will be doubled.

Illustration No. 4.—After duplicating all money the government subtracts half of each coin as seigniorage, thus reducing the weight to that of the debased coinage in the second illustration, removing the difference between them. Prices will remain at the same level as before the seigniorage is abstracted.

The **conclusion** to be drawn from these illustrations is as follows: Doubling the quantity of money in any way doubles prices, unless there occurs a change in velocity of circulation of money or in volume of trade.

To **generalize,** if the number of dollars is increased, whether by renaming, cutting into parts, duplication, or by other means, prices increase proportionately, providing velocity of circulation and volume of trade remain unchanged.

INFLUENCE OF BANK DEPOSITS.—Bank checks are merely presumptive evidences of rights to draw money on the basis of bank deposits, but the ultimate **currency** consists of the bank deposits themselves. **Bank deposits** are not money, because not generally acceptable. The special consent of the payee is implied, if not actually secured. They are currency, however, because they serve as a medium of exchange.

Post office orders and **money orders** are similar to checks, being distinguishable therefrom only in that they are not issued by banks and in that they originate in special deposits of money.

In general, what is true of bank checks is true of bank notes, the difference between them lying in the fact that notes circulate freely from hand to hand while checks or deposit currency require special indorsement.

When a payment is made by check, what really changes ownership, or "circulates," is the right to draw money. The check is merely presumptive evidence of this right.

Bank deposits may consist either of gold or of promises to pay. In exchange for these deposits banks give either gold or rights to draw. Whether one deposits actual money or a mere promise to pay, he is given the same right to make out checks to draw money. Total value of rights to draw, in whatever way they arise, is termed "deposits."

In addition to lending **deposit rights,** banks lend their own **bank notes.** Bank notes are governed by the same principles as are deposit rights, the holder merely receiving notes instead of a bank credit. In either case the bank stands ready to pay on demand.

By means of credit deposits and notes of a bank may exceed its cash. Banking operations are not necessarily money operations. It is only necessary that there be wealth behind the promise to pay. A note holder is one who has exchanged his own less-known credit for the bank's better-known credit.

Ordinarily the assets of a bank consist largely of notes of merchants, although they might consist of other forms of wealth as well. Banks prefer interest-bearing notes to grain or machinery; in fact, they are compelled by law to take notes. In this way banks, in effect, cause concrete, tangible wealth to circulate.

As a matter of expediency banks must so regulate their loans and note issues as to keep on hand sufficient cash reserves to prevent any threatening insufficiency of cash. They do this by regulating the reserve in various ways. One way is to discount less freely, by raising the discount rate. Another is to refuse outrightly to lend or to renew old loans. Another is to call in loans subject to payment on demand.

Cash reserves of banks, though money, are not money in circulation, because they are not held to purchase goods but to redeem deposits. Consequently money in society is divided into two chief parts, **money in circulation** and **money in banks.**

Bank currency consists of two kinds, **bank notes,** belonging to the category of money, and **deposits,** a kind of substitute for money.

We may now classify all goods as follows:

1. Money
2. Deposits
3. Goods

Among these there are six possible types of exchange as follows:

1. Money against money
2. Deposits against deposits
3. Goods against goods
4. Money against deposits
5. Money against goods
6. Deposits against goods

The last two are important because they constitute the **circulation of currency.**

It is desirable to include bank deposits or circulating credit in the equation of exchange. Let M express quantity of actual money, and V the velocity of its circulation. Let M' express total deposits subject to transfer by check, and V' the average velocity of their circulation. It follows that total value of purchases is measured, not by MV, but by $MV+M'V'$, and the **equation of exchange** becomes

$$MV+M'V'=\Sigma pQ=PT$$

This equation is illustrated mechanically in Fig. 3. Trade is represented on the right by weight of a miscellaneous assortment of goods, their average price by the distance to the right from the fulcrum, or the leverage at which

FIG. 3

this weight hangs. At the left, money (M) is represented by a purse, and its velocity of circulation (V) by its leverage. The new weight at the left, in form of a bank book, represents bank deposits, M'. Velocity of circulation (V') of bank deposits is represented by its distance from the fulcrum.

Average price (right leverage) increases with increase of money or bank deposits and velocities of their circulation, but decreases with increase in volume of trade.

The introduction of bank deposits (M') in a community tends to raise prices.

RATIO OF DEPOSIT CURRENCY TO MONEY.—The quantity of deposit currency or circulating credit, M', tends to hold a definite ratio to the quantity of money in circulation, M. There are three reasons for this:

1. Bank reserves are kept in a more or less definite ratio to bank deposits.

2. Individuals, firms, and corporations preserve more or less definite ratios between cash and check transactions, also between their money and deposit balances.

3. Money and checks each have separate spheres, tending at any given time to maintain a fairly definite relation to each other because they are used in definitely different ways by different classes.

As a consequence, M and M' bear a fairly definite ratio to **each other.**

TRANSITION PERIODS.—During transition periods the relation between money (M) and deposits (M') does not remain constant. A period of transition is an interval during which a disturbance in any of the six magnitudes in the equation of exchange works out its effect. The problem is one of rising and falling prices.

When prices are rising borrowers are benefited and lenders injured. **When prices are falling** the opposite is true.

Moreover, a rise in prices generates a further rise. Assume a slight initial disturbance caused by an increase in quantity of gold. According to the equation of exchange this causes a rise in prices. Profits of business men measured in money will also rise, even if costs of business rise in the same proportion. Thus, if a man who sells goods for $20,000 which cost $10,000, clearing $10,000, could get double prices at double costs, his profit would be $40,000 – $20,000, or $20,000. This gain is only nominal since other things rise in proportion, so that no advantage is gained.

Usually, however, profits increase more than do prices because expenses do not increase as rapidly as prices. Wages are an illustration. Also past loans from creditors are more easily liquidated. As the result of unusual profits the business man expands his business by increased borrowings, mostly in form of short-time loans at banks. This engenders deposits, so that deposit currency (M') increases. This tends to increase prices still further, and still greater profits result. Borrowing is still further stimulated, and more loans are demanded, which again increases deposit currency (M'), and prices rise still further. This process is summarized below:

1. Prices rise due to some such cause as increase in gold.
2. Business men secure higher prices without proportionate increase in expenses, and so make greater profits.
3. Thus encouraged, they increase borrowings.
4. Deposit currency (M') expands relatively to money (M).
5. Because of this expansion of deposit currency (M'), prices rise still further; so that No. 1 is repeated; then No. 2, etc.

The expansion of deposit currency abnormally increases the ratio of M' to M. There are also disturbances in the Q's, in V, and in V'. Stimulation of loans stimulates trade. New construction is begun, and times are said to "boom."

The check upon this tendency comes when it grows more difficult to secure loans, banks being compelled to refuse loans because the loans have already become abnormally large with reference to reserves. Those who cannot secure new loans may find themselves unable to pay their debts, so that they become insolvent and fail. Banks fall under suspicion, depositors fearing that they may not be able to realize on loans already made. Runs on the banks result, and reserves are depleted when most needed. Renewed borrowing becomes difficult or impossible, and original loans may be called. As a result many businesses become bankrupt. This reduces the demand for loans, and tends to end the **crisis.**

When reaction sets in, bank loans grow smaller and deposits (M') are reduced. This contraction of deposit currency causes a further fall in prices. Those who borrowed to buy goods find they cannot get their money back. The order of events is as follows:

1. Prices fall.
2. Business men get lower prices than before without corresponding reductions in expenses, and thus profits are reduced.

3. Discouraged by small profits, they diminish their loans.
4. Deposit currency (M') diminishes relatively to money (M).
5. As a result, prices fall still further, and Nos. 1 and 2 are repeated, etc.

The process continues so long as profits remain abnormally low. People in debt lose most. Business is called "bad." The process stops when loans are easier to get. They are easier to get because of the accumulation of reserves in banks. Gradually, after the weaker ones are forced out, conditions return to normal, and the strong concerns build up a new credit structure. Then the inflationary tendency repeats itself.

Monetary Systems

GRESHAM'S LAW.—For a long time it has been noticed that it is difficult to keep two or more metals in circulation at the same time. The monetary unit of one becomes cheaper than the other or others, and tends to drive out the dearer. This tendency has been named "Gresham's Law," after Sir Thomas Gresham, an adviser of Queen Elizabeth, who called attention to it about the middle of the sixteenth century, although many others had noted it previously. Briefly stated, the law is: **The cheaper monetary unit tends to drive out the dearer.**

The reason the cheaper money prevails rests with the one giving it in exchange, not with the one receiving it, because being given the choice of paying his debts in either of two moneys, he naturally selects the cheaper. Were the initiative with the one receiving the money, dearer money would be chosen in preference to cheaper money.

Two classes especially interested in withdrawing the dearer money from circulation are bankers and goldsmiths, who use it for export or melting. The reason it is required in foreign trade is that it is the foreigner receiving the money who is in a position to dictate what kind of money he will accept.

BIMETALLISM.—Under bimetallism, governments open their mints to free coinage of two metals, usually gold and silver, at a fixed coinage ratio, making both kinds of coin unlimited legal tender at that ratio.

By **coinage ratio** is meant the ratio of the weight of the silver dollar to that of the gold dollar. At present, this is 16 to 1. A silver dollar weighs $412\frac{1}{2}$ grains, almost exactly 16 times the weight of a gold dollar, 25.8 grains.

Under bimetallism the debtor has the option, unless otherwise bound by contract, of making payment in either gold or silver money.

The two requisites of complete bimetallism are:

1. Free and unlimited coinage of both metals at a fixed ratio.
2. Unlimited legal tender of each metal at that ratio.

The **purpose of bimetallism** is to render the purchasing power of money more stable.

Notwithstanding Gresham's Law, there are certain conditions under which bimetallism works. The situation when opening mints to free and unlimited coinage of gold and silver at a given ratio, silver dollars being cheaper than gold, may be summarized as follows:

1. The first effect (as emphasized by the monometallists) is the operation of Gresham's Law, the cheap silver dollars tending to drive the dear gold dollars from circulation.

2. But (as emphasized by the bimetallists) this operation of Gresham's Law tends to reduce the disparity between the values of gold and silver

dollars. Due to eagerness of debtors to use silver instead of gold to pay debts, the value of silver is increased while that of gold is decreased. As a result the values of gold and silver dollars may become equal.

3. But the next result is a stimulus to silver mining and the discouragement of gold mining, so that silver becomes more plentiful, consequently cheaper, and gold scarcer, consequently dearer. As a result, silver again tends to drive out gold.

4. This increase of silver (coin and bullion) and decrease of gold are self-limiting. The increased production of silver is checked by increased cost of production, and consumption tends to overtake production, whereas the opposite adjustments apply to gold.

THE "LIMPING" STANDARD.—Being no longer practiced, bimetallism is a subject of historical interest only. In certain countries where formerly practiced, as France and the United States, there has resulted a monetary system known as the "limping" standard. This results when, in a system of bimetallism, before either metal wholly expels the other, the mint is closed to the cheaper metal, while the coins outstanding in that metal are not recalled. As a result, supposing silver to be the restricted metal, the coins thus restricted are retained in circulation at par with gold, and this parity may continue even if additional limited amounts of silver are coined. There then results a difference in value between silver bullion and silver coin, the latter being overvalued. Since newly mined silver cannot become money, the value of silver coins remains artificially greater than that of silver bullion.

So long as the quantity of silver or other token money is too small to displace gold entirely, gold will continue to circulate, and the value of other money cannot fall below that of gold, for if it should, it would displace gold. The parity between gold and silver under a "limping" standard is not necessarily dependent on redeemability in gold, but may result simply from the limited amount of silver coin. In such a case, loss of confidence in the silver money would be sufficient to cause its depreciation and even its disappearance from circulation.

Irredeemable paper money, like irredeemable silver dollars, may continue to circulate at par with gold limited in quantity and not too unpopular; but if gradually increased in amount it may expel all metallic money.

As a rule, irredeemability in paper money is undesirable, causing distrust and discouraging long-time contracts and enterprises.

Price Levels and Quantities

PRICE TENDENCIES.—Prices do not move in unison. Some rise higher, some not so high, as the average. Some prices are contractual and so cannot change between date of making contract and date of its fulfilment. Frequently, also, there are legal restrictions, as in case of fares charged by utilities. Also prices of goods consisting largely or wholly of the money metal cannot fluctuate widely. The same is true to a somewhat less degree of their substitutes. The forces of supply and demand are continually at work on individual prices. These together cause a very considerable **dispersion** of prices, which means that prices are constantly changing relatively to each other, regardless of their **general level** or average.

The general levels and general movement of prices are expressed by means of **index numbers** which give average levels of prices at different times.

Similarly, **quantities** of goods vary both absolutely and relatively to other

goods. Changes of quantities are no more uniform than are changes of prices.

It therefore becomes necessary, in order to fulfil the requirements of the equation of exchange, to formulate two composite or average magnitudes: the **price level** (index number) and the **volume of trade.**

In the equation of exchange the right side, ΣpQ, is converted into PT, in which T measures the volume of trade, and P is the index number expressing the price level at which this trade is carried on. T is the sum of all the Q's, and P is the average of all the p's.

To carry out these definitions in practice, suitable **units** of measure for the various articles must be selected. The ordinary units in which the various Q's are measured will not be the most suitable. Coal is sold by the ton, sugar by the pound, wheat by the bushel, etc. If we should merely add together these tons, pounds, bushels, etc., and call their grand total so many "units" of commodities, we should have a very arbitrary summation. It will make a difference to the result whether we measure coal by tons or hundredweights. The system becomes less arbitrary and more useful for the purpose of comparing price levels in different years if we use, as the unit for measuring any commodity, not the unit in which it is commonly sold, but the **amount which constitutes a "dollar's worth" at some particular year called the base year.** Then **every** price in the base year becomes exactly one dollar, and the **average** of all prices in that year also becomes exactly one dollar. In any other year, the average price (i.e., the average of the prices of the arbitrarily chosen units which in the base year were worth a dollar) will be the index number representing the price level, while the number of such units will be the volume of trade. Thus, let us suppose, for simplicity, that there are only three commodities (bread, coal, and cloth), and let us use the table below (Table 7) for facts to start with.

We wish to compare the average price or price level in the year 1912 with that in 1909 as the base year, and also to reckon the total volume of trade in 1912 in comparison with that in 1909. If we were not desirous of taking great pains to secure the best results, we could use the figures just as they stand—averaging the prices and adding together the quantities. By this rough-and-ready method the average price per unit for 1909 would be $(.10+5.00+1.00)\div 3$, or \$2.03; and for 1912 $(.15+6.00+1.10)\div 3$, or \$2.42; the total trade for 1909 would be $200+10+30$, or 240 million units; and for 1912, $210+11+35$, or 256. That is, the price level would show a **rise** between 1909 and 1912 from \$2.03 to \$2.42, or a rise of 19.2%, while the volume of trade would show a rise from 240 to 256, or 6.6%. But the simple method just used gives too much weight in the price comparison to coal, the price of which happens to be expressed by a large number simply because it is measured by a large unit. One way to remedy this disproportionate weighting is to measure all articles by one unit, as the pound; but a better way is that already described above, viz., to use as our unit "the dollar's worth in 1909." The dollar's worth of bread in 1909 was evidently ten loaves, the dollar's worth of coal, the fifth of a ton, and that of cloth, the yard. Taking these units, we now have:

The average price in 1909, on the basis of these new units, is simply \$1, since this is the price of each individual article; while the average price in 1912 is, if we take the simple arithmetical average, $(\$1.50+\$1.20+\$1.10)\div 3$, or \$1.27. The total volume of trade in 1909 is (in millions of units) $20+50+30$, or 100; and in 1912, $21+55+35$, or 111. Thus, according to this reckoning, the price level has risen from \$1.00 to \$1.27, or, as it is usu-

Table 7

Year	Prices			Quantities Exchanged		
	Bread (per loaf)	Coal (per ton)	Cloth (per yard)	Bread (millions of loaves)	Coal (millions of tons)	Cloth (millions of yards)
1909......	\$0.10	\$5.00	\$1.00	200	10	30
1912......	.15	6.00	1.10	210	11	35

Table 8

Year	Prices			Quantities		
	Bread (per ten loaves)	Coal (per ⅕ ton)	Cloth (per yard)	Bread (millions of ten loaves)	Coal (millions of ⅕ tons)	Cloth (millions of yards)
1909......	\$1.00	\$1.00	\$1.00	20	50	30
1912......	1.50	1.20	1.10	21	55	35

ally expressed, from a base of 100% to a height of 127%—a rise of 27%; while trade has increased from 100 million units to 111 million units, an increase of 11%.

We may slightly improve the above method by taking for 1912 a "weighted" average of prices instead of a simple average. It is found by dividing the total **value** of all the goods by their total **quantity.** This is a better method because, in the result, it gives less weight to the commodities less dealt in, such as bread. The average for 1909 will still be \$1.00, for that is the price for each individual commodity; but the average for 1912 will be slightly different. The total value is (in millions of dollars) $1.50 \times 21 + 1.20 \times 55 + 1.10 \times 35$, or 136 million dollars, and the total quantity is, as we have already seen, $21 + 55 + 35$, or 111 million units; consequently the average price is $136 \div 111$, or \$1.23. According to this last and best method, then, the price level has risen from \$1 (or 100%) to \$1.23 (or 123%); this indicates a rise of 23%. The index numbers are 100% for 1909 and 123% for 1912.

The results of the three methods of reckoning the average rise of prices differ slightly, showing respectively a rise of 19%, 27%, and 23%. Other methods, of which many are possible, would also differ slightly. No method gives an absolutely perfect index of changes in price levels, but the last one worked out above is as good as any. The main point in any system of averages is to give great weight to the great staples of trade, and little weight to the insignificant articles. Radium has fallen in price enormously in the last few years, but radium is so unimportant as an article of commerce that its great fall ought not to be allowed in our reckoning to have much effect on the index number for the general price level. Introducing, then, our newly found magnitudes, P and T, into the equation of exchange, it assumes the form

$$MV + M'V' = PT,$$

its right member being the product of the index number, P (or the average of

prices), multiplied by the volume of trade, T (or the sum total of "units" sold).

Supply and Demand

INDIVIDUAL PRICES.—An individual price presupposes a price level. The following considerations prove this.

Price of sugar is a ratio between sugar and money. In the mind of the buyer of sugar, money stands for the other things it might buy if not spent for sugar. The greater this power of money to buy things in general, the less will be offered for sugar in particular, and the lower the price of sugar will become. In other words, the lower the general price level, the lower the price of sugar.

Supply and demand of sugar determine its price **at a given level,** because those who supply and demand it are governed by their idea of the general purchasing power of money.

DETERMINATION OF INDIVIDUAL PRICES UNDER COMPETITION.—Price determination falls under two heads, according as there is competition or monopoly. Assume perfect competition—independent buyers and independent sellers. In such a market there is only one resultant price for all buyers and all sellers, since if there were more than one price no buyers would buy at any of the higher prices and no sellers would sell at the lower prices. Watchfulness of competitors eliminates price differences. Slight differences which exist are the result of the imperfection of competition.

MEANING OF DEMAND AND SUPPLY.—Demand for a commodity is different for different prices. The same is true of supply. Demand increases as prices fall; supply increases as prices rise. A demand and supply schedule results. Such a schedule is illustrated in Table 9 below. The second column shows demand relative to the prices given in the first column.

Table 9

Price	Schedule of Demand	Schedule of Supply
$ .08	900	1,100
.07	940	1,050
.06	1,000	1,000
.05	1,100	900
.04	1,250	750

The third column shows supply relative to the prices given in the first column, giving largest quantities which will be supplied at stated prices. The supply at first exceeds the demand, but as prices fall demand increases and supply decreases, until, at 6 cents, they are equal. For prices below 6 cents demand exceeds supply.

It is evident that there is but one price, 6 cents, which will make demand and supply equal, and it is finally fixed at that point, because if it goes higher supply would exceed demand and the price would fall; if it goes below, demand would exceed supply, and the price would rise. Such a price which makes supply and demand equal "clears the market" and is the **market**

price. The amount supplied and demanded at the market price is the **amount marketed.**

CURVES OF DEMAND AND SUPPLY.—In Fig. 4, $S\ S'$ represents the supply curve; $D\ D'$ the demand curve. If we take the price $O\ P''$ the supply is represented by the long line $P''\ S''$; the demand by the short line $P''\ D''$, leaving the difference between them, $D''\ S''$, as excess of supply over demand. Efforts of sellers to get rid of this excess drives prices down. The market price cannot exceed $O\ P'$. If it were only $O\ P'''$, demand would be $P'''\ D'''$, and supply only $P'''\ S'''$, leaving an excess of demand over supply of $D'''\ S'''$, which at that price buyers are unable to secure, so that they bid up the price to $O\ P'$. At point P the two curves intersect. Its latitude

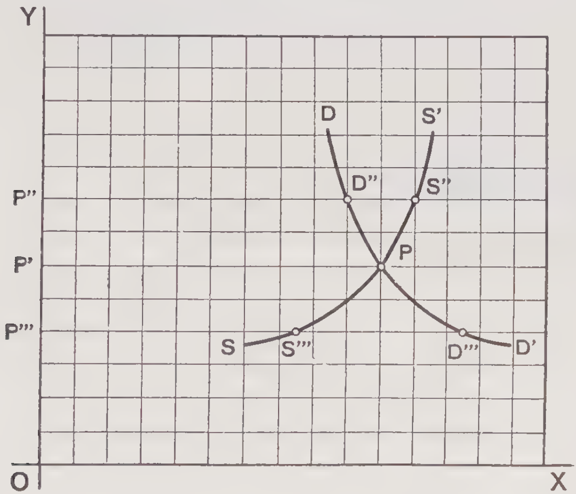


Fig. 4

represents market price, whereas its longitude represents the amount demanded and sold.

All demand curves descend to the right, but at different rates. Those which are steep represent demand schedules of **necessities,** because a great fall in price is necessary to materially affect demand. Demand curves of **luxuries** descend slowly, because a slight fall in price leads to a great expansion in demand. Similarly supply curves ascend at different rates, the steep ones representing commodities whose supply is inelastic.

SHIFTING OF DEMAND AND SUPPLY.—An **increase of demand** may mean simply that demand has increased because market prices have fallen, in which case the **demand schedule** remains unchanged; or, more properly, it means that demand has increased without a change in prices. The same double meaning applies to an increase of supply. It may mean an increase in market supply due to a rise in prices, or it may mean an increase in the supply schedule.

INFLUENCES BEHIND DEMAND.—It is shown above that the market price of any particular commodity is that which "clears the market," making supply and demand equal. Market price and quantity marketed are determined by intersection of the supply and demand curves.

But supply and demand are not the ultimate influences determining prices; they are the proximate influences.

The **demand schedule** is the resultant of a large number of **individual demand schedules.** Each individual demand schedule is the resultant of two **desirability schedules.**

The general demand schedule is resolvable into constituent demand schedules, one for each person in the market. Total demand at any price is the sum of the individual demands at that price.

Back of each individual demand curve are two opposing forces, the desire for the goods and the desire for the money they would cost. On the relative strength of these desires depends the price he is willing to pay.

Desire for goods implies **desirability** in those goods. The desirability of a commodity is measured by the intensity of an individual's desire for it under particular conditions. Desirability is an important factor in determining price. It may refer to, (1) the desirability of the whole, or (2) the desirability of one or more units. The desirability of one unit more or less is called the **marginal desirability.**

Marginal desirability of any good is the desirability of one unit more or less of it.

In economics the concept of marginal desirability is more important than that of total desirability.

Illustration.—A person wishes to furnish his house with chairs. A few chairs are extremely desirable, but each succeeding one diminishes the need for more. The first chair is indispensable. A second one is extremely desirable. A third is highly desirable. Yet each succeeding one has a lower degree of desirability than the preceding one. If the person finally decides to buy ten chairs, the tenth chair is the marginal one; its desirability is the marginal desirability of the ten chairs. It is added to the other nine because it is regarded as worth the price paid. The eleventh is rejected because not regarded as worth the price asked. If the price of a chair is \$10, then this represents the marginal desirability. But total desirability is not 10 x \$10. It is the sum of the desirabilities of all ten chairs, or what the person would pay to secure ten chairs if he were required to buy ten chairs or none at all. Total desirability is merely of theoretical importance. Marginal desirability is of great practical importance.

Money as well as goods has a marginal desirability for each individual, being the intensity of a man's desire for an additional dollar.

ORIGIN OF INDIVIDUAL DEMANDS.—The demand curve of each individual depends on the comparison of his marginal desirabilities for goods and money. In each case the highest price he is willing to pay for a given quantity is measured by the ratio of the desirability of the last ton to the desirability of a dollar.

Illustration.—If a person regards one ton of coal as twelve times as desirable as a dollar, he will pay as much as \$12 for it, but not more. A second ton has ten times as much desirability as a dollar, so he is willing to pay as high as \$10 for it. Similarly for a third ton he will pay \$8 and for a fourth \$6, and so on. Derivation of prices from desirabilities is shown in Table 10. The last column is found by taking the ratio of the figures in the second to those in the third, i.e., dividing (*a*) by (*b*). The resulting demand schedule

Table 10

Tons Purchased	Desirability of Last Ton Purchased (*a*)	Desirability of a Dollar (*b*)	Price per Ton Customer Would Be Willing to Pay ($a \div b$)
1	12	1	$12
2	10	1	10
3	8	1	8
4	6	1	6
5	5	1	5
6	4	1	4

is the fourth column considered with respect to the first column. It gives the highest prices an individual will pay for stated quantities of coal (column 1).

If another person prizes a dollar twice as highly as the one just considered his marginal desirability of a dollar is twice the above, and Table 11 results

Table 11

Tons Purchased	Desirability of Last Ton Purchased (*a*)	Desirability of a Dollar (*b*)	Price per Ton Customer Would Be Willing to Pay ($a \div b$)
1	12	2	$6
2	10	2	5
3	8	2	4
4	6	2	3
5	5	2	2.50
6	4	2	2

The two individuals have the same intensity of desire for coal, but very different demands for coal. If coal is $5 per ton, the first individual will buy up to the fifth ton; for when he reaches the fifth ton, but not before, marginal desirability of coal (5) to him will be just five times that of a dollar. At the same price of $5 the second individual will buy only up to two tons, because for him the second ton is the point at which the marginal desirability of coal (10) is five times the marginal desirability of a dollar (2). For the poor man the marginal desirability of a dollar is relatively high.

RELATION OF DESIRABILITY TO MARKET PRICE.—Market price of a commodity is equal to the ratio between two intensities of desire in the mind of each purchaser, viz., the ratio of marginal desirability of coal to that of money. No one individual can determine the market price of coal. But when all consumers are taken together they constitute the demand side of the market and exert a great influence on prices.

Market price must clear the market. This means that the market price must be such that when each individual on the demand side adjusts his purchase to it in such manner that the ratio of his marginal desirability of coal to his marginal desirability of money is equal to the price, the sum total of all such purchases equals the total supply.

The principle that market price of any good is equal to the ratio between its marginal desirability and the marginal desirability of money for each and every buyer may be restated in the following form:

1. Each purchaser buys until the ratio of the marginal desirability of the good to the marginal desirability of money is brought into equality with the price.
2. Each purchaser buys until the desirability of the marginal unit becomes equal to the desirability of the money spent for this marginal unit.
3. Each purchaser buys until his marginal gain (of desirability) is reduced to nothing.
4. Each purchaser buys until he makes his total gain (or surplus desirability) a maximum.

INFLUENCES BEHIND SUPPLY.—Total supply at any price is the sum of individual supplies at that price, as illustrated in Table 12, showing supply schedules for coal for two individuals, No. I and No. II.

Table 12

Price	Supply Schedules, Tons which Would Be Supplied by Individuals		Total $(a+b)$
	I (a)	II (b)	
$4	1,500	2,000	3,500
5	1,600	2,400	4,000
6	1,800	3,000	4,800
7	2,100	3,900	6,000

At $4 a ton individual No. I supplies 1,500 tons, and individual No. II, 2,000 tons. At $5 a ton individual No. I supplies 1,600 tons, and individual No. II, 2,400 tons, and so on. If all instead of two suppliers were included, a total supply schedule would be obtained.

Furthermore, just as each demand schedule is the resultant of a pair of desirability schedules, so each supply schedule is the resultant of two desirability schedules. But in the case of the seller it is not desirability but

undesirability which must be considered—the undesirability or trouble of supplying coal. **Marginal undesirability** is also called **marginal cost.**

Derivation of seller's undesirability or marginal cost curve is illustrated in Table 13. Figures in the last column, found from second and third by

Table 13

Tons Sold	Undesirability of Supplying Last Ton (*a*)	Desirability of a Dollar (*b*)	Price Dealer Would Be Willing to Take ($a \div b$)
1,500	8	2	$4
1,600	10	2	5
1,800	12	2	6
2,100	14	2	7

division, give prices a coal dealer would be willing to take in view of the undesirability involved in providing coal and the desirability of money he asks in return for it. If the 1,500th ton costs him 8 units of undesirability, and a dollar represents to him 2 units of desirability, he will take $4 a ton up to the 1,500th ton, and so on for other figures in the table.

The supply curve is the undesirability curve translated into money. Labor or human effort stands at the end of the analysis of supply, just as satisfactions stand at the end of the analysis of demand.

PRINCIPLE OF MARGINAL COST.—In treating demand it is usually satisfactory to assume that the marginal desirability of money remains constant, because it is not likely to be greatly influenced by any one of the many commodities one buys. But this cannot be assumed in treating supply because one may make his living by selling one, or a comparatively few, commodities, so that changes in amounts sold, or price, may make much difference in the total amount of money he secures.

Instead, the greater the sales and the more money consequently obtained, the less is the marginal desirability of money.

The **total supply curve**, analogously to the total demand curve, may be derived from a number of individual supply curves. Each such individual supply curve may be derived from,

1. Curves of marginal undesirability of furnishing the article, and
2. Curves of marginal desirability of money.

Consequently the supply curve is an undesirability curve translated into terms of money.

The market price, as finally determined by supply and demand, is not only equal to the marginal desirability of getting goods, but also to the marginal undesirability of furnishing them, both desirability and undesirability being measured in terms of money.

These principles may be summarized as:

1. The equalization of all marginal desirabilities and undesirabilities, both being measured in money, or
2. The equalization of supply and demand.

On the **supply side of the market** the great determinant of market price (in terms of money) is marginal cost (in terms of money).

The **two determinants of price**—marginal desirability and marginal cost—are human desires translated into cost.

Marginal desirability represents the desire to secure something agreeable.

Marginal cost represents the desire to avoid something disagreeable.

VARIATIONS IN SUPPLY CURVES.—Practically all demand curves descend to the right, but all supply curves do not ascend to the right.[2]

One peculiar supply curve grows out of the fact that there is a descending curve of marginal desirability of money dependent on the price assumed

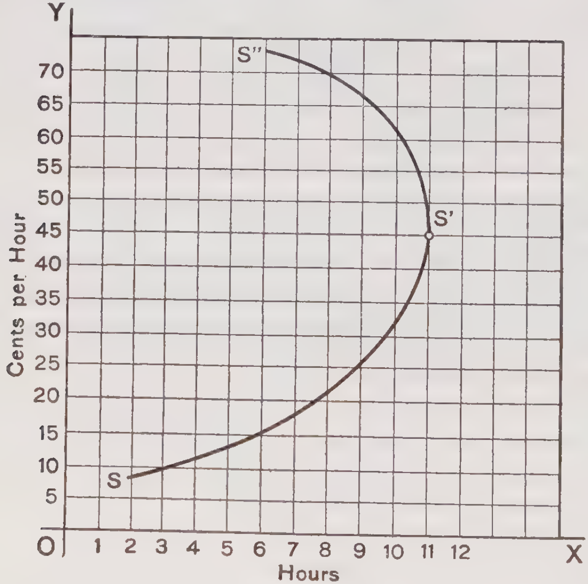


Fig. 5

This combined with the ascending curve of undesirability of efforts and sacrifices tends to bend the curve upward—so much sometimes as to curl back to the left, as in Fig. 5. This curve does not ascend to the right throughout its course. It applies especially to the labor supply, and means that rise in price does not always result in an increase in supply. It does at first, but beyond the point where the curve begins to curl back, a rise in price causes the supply to be reduced. This is because a rise in wages, for instance, results in the workman spending more time in idleness.

Another type of supply curve does not ascend, but descends. Where large production causes less trouble per unit than small, the marginal unde-

[2] See normal curves illustrated in Fig. 5.

sirability of furnishing the goods decreases with an increased supply, and decreases in faster ratio than does the marginal utility of money; so that the marginal cost expressed in money decreases with an increase of supply.

Only when the **supply curve ascends** is the price at which a seller is willing to supply equal to its marginal cost, and so is derived from curves of undesirability. **Descending supply curves** depend not on **marginal cost** but on **average cost.**

This is because no seller is willing to sell regularly at a loss, which he would do if he sold at prices corresponding to marginal cost when marginal cost decreases with the amount sold. Thus, if it costs $5 to supply the 3,000th ton of coal, while the cost of all preceding tons is greater than $5, no coal except the last ton could be sold at $5 without causing loss. In case of an ascending curve, if cost of supplying the 3,000th ton were $5, that of all preceding tons would be less than $5, so that, sold at $5, there would result a profit on each but the last.

When cost of each succeeding ton is greater than that of the preceding ton, the cost of the last, or marginal cost, is the greatest cost of all, and so exceeds average cost. Consequently, a dealer is assured a profit when he sells at a price equal to marginal cost. But when cost of each successive ton is less than that of the preceding ton, cost of the last ton is least of all, and so is below average cost. In this case, to sell at a price equal to marginal cost would result in loss.

In either case, whether the curve ascends or descends, the seller attempts to fix his price on the basis of the higher cost -marginal or average.

When marginal cost increases with supply, marginal cost is higher, and will rule supply.

When the opposite is true, average cost is higher, and will rule supply.

Cases governed by descending supply curves are said to obey the **law of decreasing cost** and sometimes the **law of increasing returns,** it being the same thing to say that ratio of cost to product decreases as to say that ratio of product to cost increases.

Opposite cases are governed by the **law of increasing cost** or, as someimes stated, **law of diminishing returns.**

Intermediate between these is the **law of constant cost,** or **law of constant returns.**

CUTTHROAT COMPETITION.—In the case of ascending supply curves, based on marginal costs, the supply at a price is the **maximum** the seller is willing to offer at that price.

In the case of descending supply curves, based on marginal costs, the supply at a price is the **minimum** the seller is willing to offer at that price.

In the first case, the more the seller can sell, the more he charges. In the second case, the more he can sell, the less he charges.

The situation is summarized as follows:

I. At a given price, each buyer is willing to take a certain **maximum amount or less** at that price.

II. At a given price, each seller is willing

1. (In case marginal cost increases with an increase of supply) to offer **a certain amount or less** at that price.
2. (In case marginal—and therefore also average—cost decreases with an increase of supply) to offer **a certain amount or more** at that price.

If the **total supply curve** descends, the price represented at the intersection

of supply and demand curves, although it clears the market, is not a stable price, but tends always to fall, and this holds true so long as the supply curve descends. The individual competitor cannot raise prices without entering into agreement with others. If he should raise prices without such agreement he could make no sales. His only course, in absence of agreement, is to undersell his competitors and drive them out of business. If he fails to do this, he must go out of business himself.

The effect of cutthroat competition is to create losses.

MONOPOLY.—Competition when supply curves are descending always lowers prices so long as there remain any competitors. The only check to the tendency is the ceasing of competition or the ceasing of the supply curve to descend.

Monopoly may arise either as the result of the survival of the fittest, or by combination.

In practice competition is more or less imperfect. **Custom,** the habit of people to continue trading with their old dealers, deters them from going where they could buy more cheaply. As a consequence, competition may, in some instances, be so limited as to prevent fierce rate wars.

MONOPOLY PRICE.—Economic action is guided by the **principle of maximum gain.** It applies to both monopoly and competition. Monopolists fix prices with an eye to effect on demand, putting prices up to a point which affords maximum profit. The higher the price, the larger the profit per unit sold; but if made too high, sales are killed. If made too low, profit per unit is killed. A middle course is therefore steered by the method of **trial and error.**

Where monopoly prices exceed competitive prices, competition may thereby be invited. Competition feared but not actually existent is potential competition. Its effect is similar to that of real competition, so that under monopoly the price is usually somewhat less than the traffic will bear.

The chief **evils of monopoly** are the ruthless crushing of competitors and discrimination; also political corruption and control.

Not all monopolies, however, are evil; where supply curves are of the descending type monopolies are beneficial because they prevent cutthroat competition.

Mutually Related Prices

ARBITRAGE.—Prices of the same article in different markets act and react on each other. The extent to which prices of the same article in different markets differ at a given time depends upon means available for transportation and for communication. A special class of men make it their business to watch prices in different markets and to make profits by buying in cheaper markets and selling in dearer ones. In such arbitrage transactions equalization of prices is limited by cost of transportation. Thus, if it costs 5 cents per bushel to transport wheat from Chicago to New York, the price in New York will tend to be not more than 5 cents higher than that in Chicago. Reduction of transportation costs means greater equalization of prices in different markets. In general, such equalization is advantageous, but it sometimes causes hardship **among producers** who are thus brought into competition with those who can produce more cheaply because favored by superior natural resources. It follows, of course, that corresponding benefits accrue to the favored producers. Opposite results accrue **among consumers,** because those enjoying low prices are injured by the rise which

equalization beings about, whereas those paying high prices are benefited by the fall produced.

SPECULATION.—This refers to equalization of prices between different times. This kind of equalization is accomplished by keeping the commodity when it is abundant and cheap until the time when it is scarce and dear. The effect is to equalize prices at different times.

Speculation may be for the **rise** or for the **fall.** Speculators who try to profit by a rise in prices are called **bulls.** They buy and hold for higher prices. Those who try to profit by a fall in prices are called **bears.** They sell future goods short, i.e., they agree to sell in advance of time of delivery, depending on the expected fall in price to enable them to buy the wheat needed to fulfil their contracts. This is called **selling short.** The effect is to encourage consumption of present supplies, because producers by buying from those who sell short are guaranteed certain future stocks at definite prices. It reduces present prices because it reduces present demand. It increases future prices because it increases future demand. By reducing the gap between present high prices and future low prices, it tends to equalize the two. When, however, differences between present and future prices become too small to cover interest charges and other costs involved, it is no longer profitable.

Speculation is beneficial when it succeeds in equalizing prices; it is injurious when it aggravates differences in prices.

Interest

FUNCTION OF INTEREST.—Most prices are determined with reference to interest, because time of use of most commodities is a consideration.

Interest may be **explicit** or **implicit.** Explicit interest is that fixed by contract. Implicit interest is that which an investor expects to realize who makes sacrifices at one time for sake of compensating benefits at a later time. It is the **effective interest rate,** and, when used to discount a bond's income, gives the price at which it was bought.

Every investment is analogous to a loan, involving a rate of interest on purchase price, just as a loan does. Moreover, every purchase is an investment of present money for future benefits in money or measurable in money. Consequently every purchase price is fixed with reference to a rate of interest.

THE BASIS OF INTEREST.—An understanding of the basis of interest involves an analysis of the supply and demand of loans, which resolves itself into a comparison between different marginal desirabilities and undesirabilities, not simultaneous, but distributed at different points in time.

The **essence of interest** is impatience, the desire to secure gratifications earlier than we can get them; in other words, the preference for present over future goods.

The **market rate of interest** is formed out of various degrees of impatience in minds of many people. The rate of impatience in any individual's mind is his preference for an additional dollar, or dollar's worth of goods, available today, over an additional dollar, or dollar's worth of goods, available a year from today. Expressed in numbers, it is the premium a man is willing to pay for this year's over next year's goods.

Thus, if he is willing to promise to pay \$1.06 next year to get \$1 today, his rate or degree of impatience is 6%. This willingness to pay a premium for present use of money or goods causes the phenomenon of interest.

This preference for present over future goods resolves itself into impatience for immediate income over remote income.

This preference for immediate over remote income resolves itself into preference for present enjoyable income over future enjoyable income.

Thus all preference for present over future goods resolves itself into a preference for early enjoyable income over late enjoyable income.

The problem of determining the rate of interest is that of determining what premium people are willing to pay for present enjoyable income in terms of future enjoyable income.

The **degree of impatience** varies among individuals, depending upon such personal characteristics as foresight, self-control, habit, expectation of life, and love for posterity.

As to **foresight,** the greater it is the less the impatience.

As to **self-control,** the greater it is the less the impatience.

As to **habit,** the influence may be in either direction.

As to **expectation of life,** the longer the expectation of life, the less the impatience.

As to **love for posterity,** this is probably the most powerful cause tending to reduce the rate of interest, because of the desire of parents to provide for their children.

Risks tend to increase the rate of interest because they increase impatience.

DETERMINATION OF RATE OF INTEREST.—The rate of interest is determined by six conditions, as follows:

1. The dependence of impatience upon prospective income—its size, distribution in time, and uncertainties.
2. The tendency of the rates of impatience for different individuals to seek a common level in the resulting rate of interest.
3. The fact that supply and demand must be equal so that the modifications in the income streams of individuals, through buying and selling, or borrowing and lending, must "clear the market."
4. Of all optional uses to which one can put his capital, he chooses the one which at the market rate of interest makes the present value of his capital the largest possible.
5. What is borrowed at any time by some persons equals what is loaned at that time by other persons.
6. What any person borrows at one time must be repaid by that person at another time with interest at the market rate.

In general, the rate of interest is low,

1. If people are by nature thrifty, farsighted, self-controlled, or thoughtful for the future welfare of their children, or
2. If they have large or descending income streams.

It is high,

1. If people are shiftless, shortsighted, impulsive, selfish, or
2. If they have small or ascending income-streams.

Income from Capital

RATIO OF INCOME TO CAPITAL.—Income is usually the **joint product** of labor and capital, these usually being complementary to each other, each helping to produce the joint product of both.

The ratio of the value of income to the quantity of capital which it yields is termed **rent.** In other words, rent is the value of income yielded per physical unit of capital. Thus land may yield a "rent" of $10 per acre.

This is a broader conception of the word than is found in ordinary usage, since it includes implicit rent as well as explicit rent, or that named in a lease between landlord and tenant.

Explicit rent is rent in the usual and strict sense of the word, the amount of income being stipulated.

Implicit rent is a broader term, being equivalent to capitalists' profits. The income is not stipulated and can only be appraised.

If a landlord rents his land to a tenant for $1,000 a year, the rent is explicit; if, however, he works the land himself, the income earned is implicit rent. To state it, it is first necessary to appraise the crops, both which he sells and which he consumes.

Explicit rent, being stipulated, is usually fixed and certain.

Implicit rent, not being stipulated, is usually variable and uncertain.

RENT OF LAND.—Rent of land, separate from that of buildings, is called **ground rent.**

Land has two important peculiarities. First, the land in the world is fixed in quantity. Second, its different qualities cannot, in most cases, be as fully separated and classified as the different qualities of most other kinds of wealth. Consequently the price of land varies with each individual piece.

Illustration.—For given corn lands assume:

1. That they are fixed in quantity.
2. That they differ in quality or productivity by continuous gradation from very fertile to very infertile lands, each fixed and invariable as to corn productivity and having no other product.
3. That the cost of tilling each acre is likewise fixed and invariable, say $10.
4. That the lands are substantially equal in accessibility.

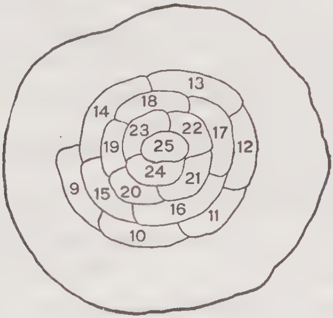


Fig. 6

Assume an island, Fig. 6, fulfilling the above conditions. Assume that the most fertile land is situated in the center and is capable of producing 25 bushels of wheat per acre per year, while other lands are arranged around it spiral fashion in order of descending productivity. If a superabundance of 25-bushel-per-acre land exists, so that it can be had merely by occupancy, and there is no prospect that inferior grades will be needed, the land is valueless and yields no rent. Corn will have a price equal to its marginal desirability measured in money and also to its marginal cost measured in money.

Since by our assumption, this cost is fixed for each grade of land and is the same for every bushel, the price of corn is in this case simply **equal to the marginal cost of producing the corn.**

If population increases so as to create a demand for corn which cannot be supplied from the most fertile land, some of the next grade, yielding 24 bushels per acre, will be used. This second-grade land will now be valueless but the first-grade land will have a value and yield rent, due to the rise in price of corn. The price will still be equal to marginal cost, but this now becomes the **cost of producing a bushel on second-grade land.**

Since there cannot be two prices for the same article in the same market, the price of corn produced on the first-grade land must be the same as that produced on the second-grade land. Consequently, owners of first-grade land now have a crop worth more than the cost of producing it, and can, if they choose, obtain a rent for it equal to the excess, i.e., one bushel per acre.

Each increase in population necessitating cultivating of lower grade of land gives a rental value to the next better grade and adds to that of all higher grades. In each case the rent of any grade of land is the difference between its productivity and that of the worst or marginal land occupied.

Two important conclusions are:

1. Price of corn is equal to its cost of production on the margin of cultivation.
2. Ground rent of any land is the difference between productivity of that land and productivity of land on the margin of cultivation.

Increase in value of land due to extension of cultivation to poorer areas is termed the **unearned increment,** because it is not due to the labor of the owner.

MODIFYING FACTORS UNDER ACTUAL CONDITIONS.—In the actual world,

1. Land is not absolutely fixed in quantity.
2. Productivity of any piece of land is not fixed, but varies from time to time both in kind and in degree.
3. Cost of tilling is not fixed, but varies with different land, and is influenced by the price of the product.
4. Some lands are more distant to reach than others and their product more difficult to bring to market.
5. Land is capable of more than one use, as corn-growing, and a change in price of corn may shift the use to which certain lands are put.

The farther cultivation is extended to poorer lands, or the more intensively the same land is cultivated, the greater is marginal cost. This is called the **law of diminishing returns.**

FOUR FORMS OF INCOME FROM CAPITAL.—Men receive income from capital in four forms, viz., interest, rent, dividends, and profits. If by rent we mean only explicit rent, and if by profits we mean implicit rent, then interest and rent represent explicit or assured income, whereas dividends and profits represent implicit or uncertain income. In case of interest and rent as thus understood, the income is free of business risk and **regular.** In case of dividends and profits, the recipient bears the business risk involved and receives an **irregular** income.

In general, those who assume risk may receive either more or less income than those who do not, and over long periods probably receive fluctuating instead of steady income. Also, on the average, risk takers probably receive

a larger income than those guaranteed against risk. Risks are assumed because of the hope of receiving a higher reward.

AVOIDANCE OF RISK.—Risk is reduced in the following ways:

1. Increasing our knowledge of the future.
2. Employing safeguards against mischances.
3. Insurance.
4. Speculative contracts, especially "hedging."

1. Risk decreases with progress of knowledge. Many trade journals make it their chief aim to aid their readers to forecast the future. Government weather bureaus supply weather forecasts, and government reports of crop conditions are for the same purpose. Engineers and geologists forecast the probable output of mines.

2. Safeguards are provided against shipwreck, fire explosion, burglary, etc.

3. Insurance consists in consolidating risks. It does not decrease risks for society as a whole, but by pooling them it steadies individual incomes and spreads the burden of risk more evenly.

4. Speculation, although dealing in chances, may be used to reduce chance. Short selling reduces risk to the vendee. Contractors reduce risk to a minimum by contracting for supplies in advance of the time when they will be needed, frequently with parties who do not yet have the goods and who therefore "sell short," thus assuming the risk. **Hedging** is a method of shifting risks whereby a dealer is relieved of risk of change in price. Thus, if he buys grain in Chicago intending to ship it to New York, thus making a profit in form of "arbitrage" which arises as the result of different prices in different places, he may find it desirable to protect himself against price changes during the period required to transport the grain. Hedging eliminates the **time** gain or loss but retains the **place** gain. It is speculation so arranged that if one loses in his regular business he wins in his speculation, or if he gains in his regular business he loses in his speculation.

Income from Labor

WAGES.—Income from labor is termed **wages.** Wages are **explicit** or **implicit.** Explicit wages are those actually paid to a hired person. Implicit wages are the earnings of a person who does not sell his services but enjoys them himself. Such a person is called an **enterpriser.** His earnings are **enterpriser's profits.**

A community's income consists of rent and wages, each being subdivided into explicit and implicit classes.

Therefore the four great branches of income are: explicit rent, explicit wages, implicit rent (capitalists' profits), and implicit wages (enterprisers' profits).

COMMUNITY INCOME.—Practically, the income of a community is divisible into six main parts by separating out from rent, whether explicit or implicit, that part which is reckoned in terms of value of capital, i.e., that part which is interest, whether explicit or implicit. While it is true that all rent may be translated into interest, only part of rent is actually so expressed. Therefore there are in the modern world **six great branches of income** considered with reference to the source from which derived, viz., wages and enterprisers' profits, rent and capitalists' profits, interest and dividends. These may be arranged as follows:

	Explicit	Implicit
From Capital	Interest per cent Rent per acre	Profits per cent (dividends) Profits per acre
From Labor	Wages per man	Profits per man

PRODUCTIVITY OF LABOR.—Men differ in productive power, some possessing a much greater earning power than others. They may be classified as common manual laborers, skilled manual laborers, common mental workers, superintending workers, and enterprisers.

The most inefficient workers correspond roughly to no-rent land in economic analysis.

PECULIARITIES OF LABOR SUPPLY.—The peculiarities of wages as compared with rent result from the fact that laborers own themselves. These peculiarities lie in the **supply curve.** See Fig. 7. The supply curve of human

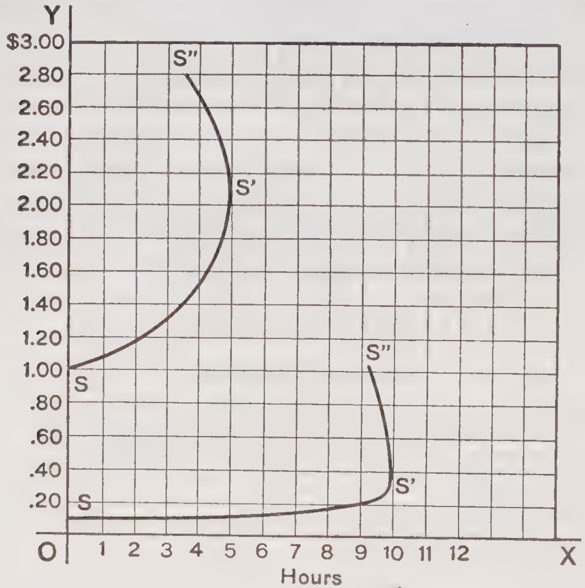


Fig. 7

services ascends very rapidly and often "curls back," due to the fact that a man's desire for more money decreases rapidly with increased earnings. Beyond a certain point, the more he is paid, the less he will work.

Curve $S\ S'\ S''$ is the supply curve of work for a well-to-do man, with income from sources other than his work. Curve $s\ s'\ s''$ is that of a poor man who depends wholly on earnings. He cannot afford to be idle, and employment is seldom voluntary. The minimum price necessary to induce him to work rather than become a tramp or beggar is represented in the diagram

by 0's, or 10 cents an hour. Only a slight rise in price induces him to work a full day. Height of s' is the price at which he works the greatest number of hours. Above this he prefers slightly shorter hours.

If wages remain high and a workman has a low enough degree of impatience for income to enable him to accumulate savings, he becomes more independent and his supply curve $s\,s'\,s''$ shifts in form towards that of the rich man's curve $S\,S'\,S''$. Consequently a higher minimum wage is necessary to induce the laborer to work and he is willing to work a smaller maximum number of hours.

A second peculiarity is that the earnings of a laborer are seldom discounted to ascertain his capital value. Such appraisement is usually made only for sale purposes and laborers are not sold except under slavery.

A third peculiarity is that wages are always reckoned as gross, never as net. The reason is that they are reckoned from the standpoint of the employer who pays them, not of the laborer who receives them.

A fourth peculiarity is that the supply of wage-earners differs from the supply of any other instrument. Workmen are not bred on commercial principles as are cattle, so that a rise in price of human services does not necessarily create a larger supply of laborers.

DEMAND FOR LABOR.—The demand of employers for workmen's services is generally analogous to their demand for services of other productive agents. The influence of sentiment has but little effect in altering it. Wages paid are the discounted future value of the laborer's work. The rate of wages is equal to the marginal desirability of the laborer's services measured in present money. It should be emphasized that the employer's valuation is, (1) marginal, and (2) discounted.

The employer pays for all workmen's services on the basis of the services least desirable to him, just as one buying corn buys it all on the basis of the least desirable ton. At a given rate of wages he "buys labor" to the point where the last or marginal man's work is barely worth the amount paid for it. This marginal unit is the **barometer of wages.**

In saying that wages are the discounted value of future benefits derived by the employer, we refer to the same principle as is employed to determine benefits of land hired, viz., discounting its future yield in grain or other benefits. This requires taking into account the probable future product and the time before it will be available. The employer of labor must discount the expected value of the product of labor.

A **rise in the rate of interest,** therefore, tends to lower the rate of wages because it lowers the discounted value of the final benefits derived from labor. A fall in interest rates has the opposite effect. The more remote are the ultimate benefits to which the work of the laborer leads, the more are wages influenced by a change in the interest rate. Also, a change in the interest rate diverts laborers from one employment to another. If the rate rises, labor is diverted from enterprises requiring much time to those yielding more immediate benefits.

The rate of wages is such as makes supply and demand equal, i.e., "clears the market." This means that unemployment tends to correct itself. When unemployment exists, the rate of wages tends to fall. This results in increased demand, which tends to absorb unemployment. In practice this equalization of supply and demand works itself out slowly.

EFFICIENCY OF LABOR.—The laborer's income depends both on the price he receives for each unit of work performed and on the number of units

turned out. His capacity to accomplish work is his **efficiency**. The greater his efficiency, the greater amount of income he receives. This is quite obvious in case of implicit wages, where one works for oneself. It is less so in case of explicit wages, where one works for others.

Efficiency of laborers can be increased in three ways:

1. Improvement in physical and mental vitality.
2. Improvement in trade education.
3. Improvement in organization and division of labor.

1. Some of these factors are matters of personal habit, others are matters of public health regulation. Still others are matters of working conditions. Use of alcoholic drinks and bad diet are matters of personal habit. Exposure to infectious diseases, housing conditions, and conditions under which one works, are matters largely of public health regulation. Hours of labor are an important consideration.

2. Modern division of labor has reduced the need for long apprenticeship. It has consequently fallen into disuse. Technical training is, however, necessary. This has led to establishment of trade schools.

3. Division of labor leads to great perfection of workmanship in a limited range of operations. It also makes possible the adaptation of work to the qualities and abilities of laborers, especially mental workers. Geographical division of labor, the concentration of industries where natural conditions are most favorable, is a factor in the efficiency of production.

SECTION 30

FOREIGN EXCHANGE

CONTENTS

(For list of forms, see complete table of contents.)

SECTION 30

FOREIGN EXCHANGE

DEFINITION.—Foreign exchange applies to **bills of exchange** (see Form 1) in which drawer and drawee are residents of different countries. In the United States residents of different states are legally foreign but it is not customary to classify as foreign bills originating between them. Foreign exchange, more broadly, refers to all monetary and credit instruments employed in the settlement of international transactions. It covers bankers' drafts, commercial bills, cable transfers, gold, silver, currency, money orders, travelers' checks, bond coupons, and dividend and interest checks.

£1,000..........	New York City........*March 1, 19—*.
......*ninety*......days after......*sight*......of this FIRST OF EXCHANGE	
(Second of the same tenor and date unpaid) pay to the order of .....*Ourselves*..	
.......................*One Thousand Pounds Sterling*.....................	
For value received and charge to account of	
To *ENGLISH IMPORTER*	*AMERICAN EXPORTER*
Liverpool, England	*New York City*

FORM 1. Foreign Bill of Exchange. Drawn by an American firm against an English importer and payable 90 days after sight

PAR OF EXCHANGE.—Par of exchange is the ratio of the intrinsic values of monetary units of two countries. Between countries having the same metallic standard, par of exchange is determined by dividing number of grains in the standard coin of one country into number of grains in the standard coin of the other country. The English sovereign contains 113.0016 grains of pure gold. United States gold coins contain 23.22 grains of pure gold per dollar. The pound, therefore, contains 4.8665 times as much gold as the dollar, so that $4.8665 is the par of exchange between these countries. Par of exchange between the United States and France is 19.3 cents. Between countries on the same metallic standard par of exchange remains a constant until the content of pure metal in the monetary standard is changed.

In two countries on a gold and a silver basis, respectively, the two pars of exchange, silver and gold, cannot be determined by applying the laws of arithmetic to the relative weights of the two standard coins. Reference must be made to market prices of the two kinds of bullion, silver in one

country and gold in the other. Thus the Shanghai tael, one of several principal Chinese monetary units, contains 516.4058 grains of fine silver. With market price of silver in New York at 60 cents per five ounces (480 grains), the silver par of exchange between the United States and Shanghai is \$0.646 $\left(\frac{516.4058}{480}\times 60 \text{ cents}\right)$. But when price of silver advances to 90 cents per 5 ounces, the new par of exchange is \$0.968. Because market price of silver in terms of gold money is continually changing, the silver par of exchange is not fixed but varies with each fluctuation in the silver bullion market. The same is true of the gold par which is equivalent to the price of gold in Shanghai.

MAINTAINING BANK BALANCES AT FOREIGN EXCHANGE CENTERS.—At London, New York, Paris, Berlin, Yokohama, and other cities, foreign exchange is dealt in on a large scale. International bankers maintain deposit balances with their correspondents in such cities. These deposit balances are built up by buying from local merchants or bankers, drafts, cable transfers, or other credit instruments for remittance abroad, and are drawn against when drafts, cable transfers, or other credit instruments are sold to local merchants or local bankers who wish to remit funds abroad.

Illustration.—Exporter & Co., New York, sell merchandise, £40,000, to Importer & Co., London. Having made shipment, Exporter & Co., in accordance with terms agreed upon, draw a sight bill (i.e., payable immediately on presentation to drawee), for £40,000 on Importer & Co., or on latter's London bank. This draft is then offered to a New York banker who buys it at the market rate for this class of bills and immediately forwards it to a London correspondent. London correspondent effects collection of the item, and places proceeds to credit of the New York banker.

With a credit in London, the New York banker can sell drafts, or the right to draw them, against this deposit balance, to customers who wish to send funds abroad. Suppose that an importing house in New York has purchased some jute in Calcutta and has made necessary arrangements with New York banker already mentioned, to finance the transaction by means of sterling drafts. The New York banker informs his London correspondent that the Calcutta merchant has been authorized to draw bills under certain specified conditions against the New York banker's London balance. The Calcutta merchant is able to convert his bills into cash immediately by selling them to his local banker in India.

Thus the more essential operations of the foreign exchange department of a bank are: purchase of bills of exchange, their deposit with correspondent bankers abroad, and against the credit thus established, the sale of either the right to draw or drafts drawn by the bank. The banker, in buying and selling foreign exchange, does much the same as the merchant who deals in commodities. As the merchant handling staples can negotiate transactions involving hedging, futures, or options, so the foreign exchange trader employs these devices to insure himself against risk and to cover his position in the market.

FLUCTUATIONS OF RATES.—Fluctuations in exchange rates are due to forces operating through demand and supply channels and in this respect are subject to same influences as price movements for any commodity. If the United States sells goods abroad or in some other way becomes a creditor of a foreign country, ordinarily bills of exchange drawn against

such shipments of merchandise are offered by our exporters to American banks. In autumn when we export much grain and cotton, the increased supply of bills of exchange causes exchange rates on England, France, Germany, and other European countries to reach normal low level for the year. In winter and spring, when our exports are not ordinarily as heavy, exchange rates on foreign points tend to stiffen. Besides merchandise exports, the other chief items which increase the supply of bills of exchange and so tend to cause rates to become easier are: sale to foreigners of securities held in this country, payment of interest and dividends on foreign securities held here, foreign travelers in the United States, ocean transportation in American ships for merchants abroad, and remittance by European insurance companies to beneficiaries in United States. Similarly, besides merchandise imports, chief sources of demand for foreign bills of exchange are: purchase by Americans of securities held abroad, flotation of foreign loans in this country, payment for ocean freight by American exporters to foreign shipping companies, insurance premiums paid to European underwriters, and expenditures by American travelers abroad.

GOLD POINTS.—Between two countries on a gold basis, movements of exchange rates are restricted to fairly well-defined limits. These limits are called the **upper** and **lower gold points.** When exchange rates reach either limit, gold shipments take place and check the further rise or fall in rates. Before the World War, when Great Britain was on a gold standard and specie payments were not suspended, sterling rates did not depart from par by more than 2 or 3 cents, the cost of shipping gold equivalent to one pound between New York and London. Whenever sterling rates reached the upper gold limit, an American banker who had a debt of one pound to meet in Great Britain would buy, in this country, $4.8665 of gold for shipment abroad at his own expense. It was thus advantageous to send gold rather than buy sterling exchange at a price which exceeded par by more than the shipping costs of sending gold. In like manner, a holder of a sterling demand draft would not sell it for any sum less than the equivalent in United States money of the sum due in England after deducting cost of sending gold to this country, because with the British gold the American could obtain at the mint or in the market our money at the rate of $4.8665 for one sovereign. The upper and lower gold points are not absolute but vary slightly from time to time as shipping costs decrease or increase.

DEPRECIATED PAPER MONEY AND EXCHANGE RATES.—When the principal European countries took steps, shortly after outbreak of war in 1914, to protect their gold reserves, irredeemable paper money soon became the circulating medium. The stabilizing influence on exchange rates of unrestricted gold shipments no longer prevailed. Par of exchange had less significance in relation to actual rates as the different countries departed farther from their gold bases.

Paper money is in essence a promise to pay bearer, on demand, basic or standard money. Basic or standard money in the United States and Europe is a piece of gold of a certain weight and fineness bearing stamp of the issuing government. When a nation suspends its promise to pay, on demand, gold for paper money, the two cease to remain at parity. Gold disappears from circulation because every one elects to pay his debts in cheaper paper money. When gold money passes hands, it commands a premium in terms of the depreciated currency. The premium is large if it is expected that a long time will elapse before specie payments are resumed. Quantity of

paper money outstanding and economic condition of the country are important factors affecting exchange rates under these circumstances.

Depreciated paper money not only causes exchange rates to become speculative and fluctuate over a very wide area, but also makes commercially possible gold shipments under conditions that might seem contrary to the principles connected with the upper and lower gold points. Thus with sterling exchange at $4.50 in New York, it might seem unprofitable to ship gold to London; it would be if England were not on an irredeemable paper basis. But as long as England is on a paper basis, gold commands a premium in terms of paper and is bought and sold in the market like any other commodity. Therefore, if price of gold advances sufficiently in England it may pay to export it from here just as wheat is exported.

Exchange rates on Europe will not return to par until European countries make their paper money redeemable in gold at face value. Even if unfavorable trade balances against European countries were wiped out, their moneys in the foreign exchanges would remain depreciated in some measure comparable to the extent to which their currency is depreciated internally.

PEGGING EXCHANGE. -On certain occasions exchange rates are not determined solely by commercial and banking factors. Particularly during wars nations interfere with the free operation of the law of supply and demand and artificially influence gold movements, interest rates, exchange rates, and certain prices. During the Great War English, French, and Italian exchanges were "pegged," or fixed by agreement, at a point somewhat below par, called the "war par." The British government maintained the sterling cable rate in New York at $4.76\frac{7}{16}$ from Jan. 1916, to Mar. 1919. This the British government effected by instructing its fiscal agents in this country to buy sterling cables offered for sale at the pegged rate. To create funds to make such purchases money was borrowed from the Treasury of the United States. When the plan was suspended in Mar. 1919, a sharp prolonged decline in sterling followed.

TYPES OF EXCHANGE -SPOTS AND FUTURES. -Exchange, like commodities, may be bought and sold for "spot," or "future" delivery. In the first case the buyer obtains his exchange immediately. In the second he contracts to receive it at some specified date in advance. To illustrate use of futures in exchange, suppose that in December a Boston exporter accepts an order for a shipment of leather amounting to 800,000 francs for delivery in Paris before the following Feb. 20. To protect himself from a speculative loss due to a decline in French exchange, the Boston exporter contracts in December to sell to his local banker the 60-day sight draft to be drawn at time of shipment. Assume that the future rate agreed upon is 8 cents per franc. With the price for his draft thus definitely fixed, the American merchant can proceed with certainty because no matter which way the exchange rates move his profit will remain the same. To be sure, he shuts out the possibility of speculative profit due to an increase in rate for francs. In February when the leather is ready for shipment, the Boston exporter draws his 60-day sight draft and delivers it to his banker as agreed. At 8 cents per franc the sum received is $64,000 which produces the anticipated profit from the transaction.

In like manner an importer can protect himself from losses from exchange risks. Mr. T. Merchant purchases tea from China and expects to make remittance with a sterling draft of £15,000 at end of 90 days. In the meantime, perhaps before cargo arrives, he sells to a retail house $\frac{1}{15}$ of total

shipment. At this time sterling demand drafts for spot delivery sell at \$4.60. Mr. T. Merchant, in quoting his price to the retailer, fixes it in reference to the \$4.60 sterling rate, allowing for handling costs and a margin of profit on the sale. Wishing to insure his merchandise profit on the transaction, Mr. T. Merchant immediately arranges at his bank for the purchase of £1,000 of sterling exchange for delivery some 90 days hence, when he will be required to remit £15,000 covering total cargo. The bank may quote its customer a rate slightly above spot rate for demand drafts, say, \$4.60$\frac{3}{8}$. Subsequently the importer makes other sales, fixing his wholesale price in each case in reference to the sterling demand rate, and at same time arranging with his bank for purchase of future exchange. When total cargo is sold, Mr. T. Merchant realizes his anticipated merchandise profit. It does not matter to him whether sterling rates advance to \$4.80 or decline to \$4.00. At the appointed time he secures from his banker at previously agreed rates the £15,000 demand draft, the amount necessary to pay purchase price of tea.

To avoid gambling in foreign exchange the bank follows a policy of compensating purchase and sale of bills. Exchange bought for future delivery ultimately provides funds abroad to cover exchange sold for future delivery. It is hardly to be expected that sales and purchases of futures can be made to match without ingenuity and alertness on the part of the foreign exchange trader. Interbank transactions offer the most important means by which a trader can cover his own position in the market. Whereas one bank may be long on futures, i.e., overbought, another may be short, i.e., oversold. Thus it is mutually advantageous for one bank to buy from the other. In transactions of this kind it is common for banks to swap bills. For example, if, in February, Bank A has too many April bills and too few May bills, whereas Bank B has the reverse situation, it is mutually desirable for Bank A to swap its surplus of April bills for Bank B's surplus of May bills.

SIX TYPES OF EXCHANGE.—Spot and future exchange may be further classified according to when the item calls for payment by the drawee, as: (a) cable transfers, (b) demand drafts, and (c) time drafts. Therefore from this point of view we have six types of exchange:

1. Spot cable transfers	4. Future cable transfers
2. Spot demand exchange	5. Future demand exchange
3. Spot time exchange	6. Future time exchange

A **cable transfer** is in effect a draft, payable immediately upon presentation to drawee, which is sent by telegraph. It is used when the saving of time is of prime importance. Cable transfers command a higher price than demand drafts because the selling banker's foreign balance is drawn upon almost immediately, whereas in case of a demand draft no such effect takes place until the required mailing time between the two cities has elapsed.

A **demand draft** or **sight bill** is a written order calling for payment of funds by drawee immediately upon presentation. It is forwarded through the mail. There is no occasion for formal acceptance by drawee as is necessary for a time bill; the item is either paid or dishonored as soon as presented to the party on whom it is drawn.

A **time bill** is a written order calling for payment of funds at a fixed or determinable future date after the item has been drawn or has been formally accepted by drawee. It is forwarded through the mail. Time bills may be drawn payable so many days "after date," i.e., after being made out by drawer; or they may be drawn payable so many days "after sight," that

is, after formal acceptance by drawee. In foreign exchange most time bills are drawn payable after sight; this makes it necessary for holder to mail them promptly to fix the maturity date early as possible and thus avoid interest losses. The longer a time bill has to run, the smaller its present value and therefore the lower its rate in the market. The reasonableness of this becomes evident when we consider the negotiating banker to whom a time bill has been offered by an exporter. The banker in quoting his price must be governed by the proceeds he expects to realize upon the item from a foreign correspondent. If the bill has 90 days to run, discount charges to be deducted by foreign correspondent are greater than if maturity date is only 30 days hence.

SPREAD IN RATES.—In the market at a given moment rates for different types of exchange tend to parity with each other when account is taken of the factor interest. Cable transfers command the highest rate, demand drafts the next highest, while time drafts are lowest of the three types of exchange. The spread or difference in rates between types is a function of time and interest, with an occasional minor disturbing factor entering into the equation. If for any reason rates do not conform to a parity relation, opportunity is offered exchange traders to make a profit until the situation is corrected. Suppose time bills are relatively low as compared with demand bills. This makes it profitable for a trader to buy time bills, remit them to foreign correspondents for credit, and at same time sell in this country demand drafts against the anticipated proceeds. Again, if demand drafts are relatively high as compared with the cable transfer rate, a trader can realize a profit by purchasing cables and selling against the proceeds abroad demand exchange in the United States.

The higher the discount rate abroad, the greater is the spread between the different types of exchange. This is due to the fact that a banker in buying a bill of exchange must quote his rate primarily upon the basis of what he expects to obtain as proceeds abroad. Therefore, the lower the foreign discount rate, the more nearly the rates for time bills, demand bills, and cable transfers approach each other.

Spot and future exchange of a given type are subject to the same market influences and tend to follow a consistent trend. In this respect the situation is no different than for spot and futures in the commodity market. The anticipation in April that franc drafts drawn the following August will be higher causes the April rate to strengthen, and vice versa. Purchase or sale of spots can always be postponed and futures can be dealt in at present; thus competition ties the two together.

RELATIONSHIP OF EXCHANGE RATES IN TWO MARKETS.—Competition causes exchange rates between two markets to maintain a consistent relationship. The situation is very much the same as that which arises when traders in cotton, grain, wool, or other commodities, noticing a discrepancy in prices in two cities, buy in one for immediate sale in the other. To illustrate: when exchange on Paris is at a discount in New York, dollar exchange is at a corresponding premium in Paris. Expressed more concretely, when franc cable transfers are quoted at 8 cents in New York, a dollar draft ordinarily costs 12.50 francs in Paris ($1÷8). Assume that the rate in Paris advances to 13 francs without a corresponding change in New York. Although on a market subject to violent fluctuations foreign exchange traders may consider the risks too great to warrant trying for a profit, nevertheless any such condition as the one under consideration is only temporary.

A New York foreign exchange trader cables his Paris correspondent to sell dollar cables on New York in the Paris market. At the rate of 13 francs for a dollar, $10,000 would place 130,000 francs to the credit of the New York banker in Paris. At the same time the New York banker sells franc cables in this country at the rate of 8 cents. Therefore, 130,000 francs would yield $10,400, or a profit, before allowing for incidental expenses, of $400 on the original $10,000 paid by the New York banker for cables drawn against him. The result of this transaction and similar ones is a tendency to correct the discrepancy in rates through increasing the supply of dollar cables in Paris and franc cables in New York. In the first part of the above illustration the same results are obtained if the New York banker brings cables for remittance to his Paris correspondent instead of instructing latter to sell cables on New York.

TRIANGULAR ARBITRAGE.—Arbitrage in exchange consists essentially of buying exchange in one place at a low rate and selling it simultaneously in another place at a profit. Triangular arbitrage means operating between three markets for the purpose of making a profit due to lack of consistency in rates between the points in question. Arbitrage transactions require rapid action on the part of the foreign exchange trader and so are almost entirely confined to cable transfers.

Suppose that on a certain date cable transfer rates between New York, London, and Paris are quoted as below:

1. Sterling cables in New York, $4.60.
2. Cable transfers in New York on Paris, 8 cents.
3. London cables on Paris, 58.35 francs.

A foreign exchange trader in New York purchases a cable transfer for £10,000, paying $46,000, and at the same time instructs his London correspondent to purchase with this amount of sterling franc cables in the London market. At 58.35 francs per pound, £10,000 will purchase 583,500 francs for remittance to a Paris correspondent. The New York banker now proceeds to sell cables against his credit in Paris, and at the rate of 8 cents per franc will realize $46,680. But since he started by purchasing £10,000 at a cost of $46,000, he has made a profit of $680 before allowing for cable charges, commission, and incidental expenses. The possibility of continuing to make a profit of this kind tends to be quickly corrected by the very transaction itself; the supply of the dearer exchange is increased and the demand for the cheaper exchange is also increased.

FINANCING IMPORTS AND EXPORTS.—The bulk of imports and exports are financed by means of bank drafts drawn under commercial letters of credit. A commercial letter of credit is a statement of authorization and undertaking by the issuing bank, naming the conditions under which the beneficiary (exporter) may draw drafts against the bank or its correspondent. One of the chief purposes which a letter of credit serves is to enable the exporter to find a ready market for his bills which will be drawn on a bank whose standing is known instead of on a merchant who is not widely known. By means of a letter of credit, an importer can readily obtain goods from foreign merchants who cannot be expected to know or rely upon his business standing. Furthermore, purchases can be safely made where the exporter requires cash at time of shipment. By the system of letters of credit the importer is enabled to finance the transaction by borrowing funds ultimately from the world's monetary centers at the comparatively low rates of interest regularly prevailing there.

To point out the main steps in financing an importation: Importer & Co. of New York arrange with their bank, the Prosperity Trust Co., to open a 90 days' credit in favor of Exporter & Co., of Rio de Janeiro. The transaction involves a purchase of coffee amounting to $12,000. After receiving the New York bank's letter of credit authorizing drafts under certain stipulated conditions, the Brazilian export house, already having secured cargo space, makes shipment. At the same time it draws on the New York bank a 90-day sight bill for the purchase price of the coffee. To the draft are attached the ocean bill of lading, commercial invoice, consular invoice, and other shipping papers. The draft is then turned over by Exporter & Co. to their local bank which either discounts the item or receives it for collection. Draft and documents are immediately forwarded to the Brazilian bank's New York correspondent which gets in touch with the drawee, the Prosperity Trust Co. Upon acceptance of the draft, the documents, but not the draft, are surrendered to the Prosperity Trust Co., and the latter notifies its customer, Importer & Co. Before being able to obtain the cargo from the steamship company, Importer & Co. will need possession of the bill of lading calling for the delivery of the coffee. In order to protect its interests the Prosperity Trust Co. requires Importer & Co. to sign a trust receipt in return for obtaining the bill of lading. Trust receipts vary in form and terms but in general specify that title to the goods rests with the bank to which the proceeds of the sale must be given until the debt is settled. It is not customary, however, for a bank to insist rigidly upon the terms of the contract, unless there is danger that the customer will not be able to meet his obligations. At the end of 90 days the Prosperity Trust Co. will look to Importer & Co. for funds to cover the maturing draft, and also for the usual or agreed-upon commission of, say $\frac{3}{8}\%$, figured on the amount of the letter of credit.

DOCUMENTARY INSTRUCTIONS.—When drafts have attached bills of lading or other shipping papers they are known as "documentary" bills, whereas if no such papers are attached they are called "clean" bills. The shipping papers of a documentary bill include, in addition to the bill of lading, insurance policies, consular invoices, certificate of origin, certificates of inspection, and similar papers, according to the character and destination of the shipment. Most important of these papers is the bill of lading which carries title to the merchandise, the sale of which the draft represents. The importer, who is the drawer of a documentary bill, has the right in any event to receive attached bill of lading and other papers when he makes payment. However, he may be treated more liberally. Shipping documents may be handed to him for his mere acceptance of the draft. The disposition to be made of the shipping papers by the negotiating banker is indicated by the documentary instructions accompanying the draft. These instructions may be:

1. Documents for payment (D. P.)
2. Documents for acceptance (D. A.)
3. Documents for delivery (D. D.)

Of the three types of instructions, "documents for payment" give holder the greatest security because he retains possession of the collateral until payment has been made by the foreign importer. These are the usual instructions when the draft is drawn on a merchant. In the event of such a draft being a time bill, the importer becomes entitled to a rebate of interest for taking up the item before maturity. When the drawee of the draft is a

bank, the terms are never "documents for payment," but rather "documents for acceptance" or perhaps "documents for delivery." Drafts drawn with the instructions "documents for delivery" are exceptional. Instructions of this third class confer authority upon the agent of the exporter to surrender bill of lading and other shipping papers even before acceptance is made.

Accounting Procedure

COMMERCIAL LETTERS OF CREDIT.—These are instruments by which exporters are authorized to draw their drafts against banks, for the account of importers. (See Form 2.) The **bank accounting procedure** required depends upon: (*a*) whether or not the drafts are to be drawn in the currency of the exporter, (*b*) the method of notifying the beneficiary of the existence of the credit, (*c*) how the foreign accepting bank is reimbursed.

Credit No.....*538*....

PROSPERITY TRUST COMPANY
FOREIGN DEPARTMENT

For *$12,000—U. S. C.*

New York City,......*March 10, 1923.*

EXPORTER AND COMPANY
Rio de Janeiro, Brazil

Dear Sirs:

At the request of......*Importer and Company, New York City*......we hereby authorize you to value on Prosperity Trust Company, by your drafts at...... *three (3) months*......sight for any sum or sums not exceeding a total of...... *Twelve Thousand Dollars*......accompanied by commercial invoice, consular invoice, bills of lading representing..........shipment of......*coffee from Rio de Janeiro to New York*......Insurance......*marine, to be effected by shippers.*

Bills of lading for such shipments must be drawn to the order of Prosperity Trust Company unless otherwise specified in this credit.

A copy of the consular invoice and one bill of lading must be sent by the bank or bankers negotiating drafts, direct to the Prosperity Trust Company, New York City, U. S. A.

The amount of each draft negotiated together with the date of negotiation must be endorsed hereon.

We hereby agree with bona fide holders that all drafts drawn by virtue of this credit, and in accordance with the above stipulated terms, shall be honored upon presentation at Prosperity Trust Company if drawn and negotiated on or before ......*June 10, 1923.*

N. B. All drafts drawn under this credit must bear clause "drawn under Prosperity Trust Company Letter of Credit No. 538 dated New York City ......*March 10, 1923* ......to cover shipment of.... *coffee*......from......*Rio de Janeiro to New York City*......

PROSPERITY TRUST COMPANY
....
....

FORM 2. Import Letter of Credit (Dollars)

For convenience the importer's bank which arranges for the granting of the credit to the exporter is referred to as the "opening" bank. By "notifying" bank is meant the institution which advises the beneficiary of the granting of the credit. In some cases one bank may perform both functions.

If the drafts are to be drawn in terms of the money of importer's country, the opening bank issues a letter of credit on itself which is probably transmitted directly to the exporter either by the bank or by the importer. The bank may choose, however, to have a foreign correspondent notify the beneficiary. In the latter case the notifying bank simply forwards the instructions; no credit relations are involved and therefore the transmission of such advice calls for no accounting debits or credits for either bank. If notifying bank, or some other institution located in beneficiary's vicinity, voluntarily, and not at request of opening bank, purchases beneficiary's draft, accounting transactions are required. As drawer of the draft the beneficiary is contingently liable to purchasing bank. The transaction in this respect involves same accounting procedure as a domestic bank discount or loan. Opening bank now becomes liable to purchasing bank as a holder of the draft, but no accounting record is necessary until the item is presented to drawee (opening bank) for payment.

When the **letter of credit** specifies that the drafts are to be drawn in the currency of beneficiary's country, a foreign correspondent is requested to pay the drafts of which it is customarily the drawee. Opening bank probably has a deposit balance with the foreign correspondent. The latter simply makes its charges against this account. The American bank in turn credits its account with the foreign bank; this credit is offset by a debit to the customer's account or by funds received from him. In case no accounts with foreign correspondent exists, or the opening bank prefers not to have this account debited, foreign correspondent may reimburse itself by drawing a draft either on the opening bank or on another correspondent bank with which the opening bank maintains a balance.

In **handling commercial letters of credit** the important accounts which a foreign exchange department of a typical bank must keep are as follows:

(a) **Customers' Liability under Commercial Credits—Asset Account.**—Represents the amount of cover which customers must furnish the bank to meet drafts drawn under credits issued at request of such customers. This account is debited for drafts which the bank itself accepts or when foreign banks advise that they have accepted drafts. Credits to this account are made for payments received from customers.

(b) **Our Acceptances under Commercial Credits—Liability Account.**—Shows amount of drafts accepted by bank itself; it is credited when acceptances are made and debited when they are paid.

(c) **Acceptances of Foreign Banks under Commercial Credits—Liability Accounts, Similar to (b).**—Represents liability of bank to provide funds to cover acceptances made by foreign correspondents at bank's request under letters of credit. The account is credited upon advice from abroad that acceptance has been made. It is debited at maturity of draft or before that time if payment is made in advance. Offsetting credit is the account of the foreign bank.

(d) **Commissions—Revenue Account.**—Commissions earned under commercial credits are credited to this account. Debits are made for adjustments and closing entries.

(e) **Commercial Letters of Credit Issued (Foreign Currency)—Contingent Liability Account.**—The face value of each commercial credit issued in foreign

currency is converted into United States money at a predetermined or an arbitrary rate and resulting figure is credited to this account. It shows contingent liability of the bank to meet total amount of drafts, drafts not yet drawn but which foreign beneficiaries are entitled to draw under outstanding letters of credit. Debits are made to this account upon advice of acceptance by foreign banks, which act changes the contingent liability to a real one. Debits are also made to take care of canceled or expired credits.

(f) **Commercial Letters of Credit Issued (Dollars)—Contingent Liability Account.**—This account is similar to (e) and represents contingent liability for drafts which have not yet been drawn but which beneficiaries are entitled to draw on this bank under dollar letters of credit. Debits are made to this account when drafts are accepted and the contingent liability thereby becomes real. Debits are also recorded when credits have expired or are canceled.

FOREIGN BRANCH ACCOUNTING.—Exchange rates on nearly every gold standard country (this includes most important commercial nations) prior to the Great War fluctuated within very narrow limits. Foreign branch accounting was then a comparatively simple matter. Par rates or a figure close to that point was used to convert foreign currencies into dollars. Any difference between the rates so used and the actual market rate was unimportant, being taken care of in the Profit and Loss account on books of home office. Although some concerns still adhere to the old policy of conversion, the results are misleading. Both sales and expenses for the foreign branch are overstated.

From the point of view of the home office the accounting problem centers about the consolidated balance sheet and profit and loss statement. The accounting principles and procedure applying in this country to transactions between a concern and a domestic branch are not altered when branch is located abroad. Only the details vary to some extent, depending upon method of invoicing and manner of making remittance. In an illustrative case home office ships goods to foreign branch, charging latter at same prices which would be quoted to an independent dealer. When remittances are received from abroad the foreign branch account at home office is credited for invoice price of goods thus paid for. If remittance includes a profit on sale of goods, home office also credits Profit and Loss account. If a loss results, a debit is made to same account.

When consolidated statements are prepared by home office, figures on books of foreign branch should as a rule be converted into dollars at rate of exchange effective on last day of period. This assumes that exchange rates have not returned to their pre-war levels. An exception to the above rule may be desirable in converting the value of **fixed assets** of foreign branch. If this item is a comparatively large one and exchange rates have depreciated heavily since such investments were made, it is best accounting practice to convert the values either on the basis of actual rates or of average monthly rate at time fixed assets were purchased. These assets will be serviceable for a number of years; their value for this purpose is not dependent upon current fluctuations in exchange. Same treatment should be given to corresponding depreciation reserves. Reserves should also be set up on consolidated balance sheet to provide for difference between cost of merchandise to home office and price at which it was invoiced to foreign branch. Adjustment reserves of this kind should be figured on basis of exchange rate used to convert merchandise.

For illustration of foreign exchange accounting see section on "Accounting Principles."

PURCHASE OF TIME BILLS.—Purchasing of 30, 60, or 90-day time drafts or acceptances is a common type of bank transaction. The bills are immediately forwarded to a foreign correspondent either for rediscount or to be held until maturity. At the time of purchase the American bank debits Advances on Time Bills, or an account with some such appropriate title, and credits Cash, and Purchase Discounts on Time Bills. Whether the bills are sent abroad for rediscount or to be held until maturity, foreign correspondent in either case credits in foreign currency the American bank's deposit account for the proceeds. A **letter of advice** is also sent to the American bank, which thereupon debits the account with its foreign correspondent. The debit is shown both in foreign currency and in dollars converted at market rate at time of collection or discount.

EXCHANGE SALES.—When a bank sells to a customer, or to another bank, drafts or cables on a foreign correspondent, Accounts Receivable or Exchange Sales is debited and the account with the foreign correspondent is credited. The handling of charges to the customer for brokerage commissions and cable costs follows the regular routine of general accounting. Exchange Sales is debited, not credited, at time of sale. This is because Exchange Sales represents the amount due the bank. It is the practice for sales of drafts or cables to be paid immediately or within a few days. Exchange Sales is, therefore, not only a controlling account, but also in effect a clearing account. When payments are received, the bank debits Cash and credits Exchange Sales.

POSITION SHEETS.—One of the most important routine duties of the foreign exchange department is recording the "position" of the purchases and sales of exchange and commitments for the future. Position records are kept so that the trader can tell at a glance not only where and how much funds the bank has abroad, but also what these foreign balances will be as a result of items in transit and future contracts which have been entered into.

A **sight position sheet** is arranged to show in advance the amount of foreign funds available for drawing sight or time drafts upon arrival abroad of the next mail steamer; the calculations do not include purchases or sales of exchange that will take place while vessel is en route. To determine sight position at beginning of any day, add to the cable balance at end of previous day those bills purchased and those drafts sold which will go forward on the steamer under consideration, also any previously purchased bills which the foreign correspondent has been instructed to hold until maturity and which become due on that day.

A **cable position sheet** shows the bank's balances abroad available for cable sales. Separate data are kept for each foreign correspondent, indicating amount of the deposit and the different dates on which the funds become available. Opposite each correspondent's name appears in the first column the cable transfer balance for a given day. In the next column is shown the net debits or credits which will affect the balance on the succeeding day. The debits are found by adding to the cable transfers sold calling for payment on that day, draft advices and other debit items due to arrive abroad that day, also amounts to meet maturing drafts drawn under commercial letters of credit. The credits are computed by adding all the bank's payments and remittances, whether by bought transfers, cable, or otherwise, that will be received by the foreign correspondent on that day. Similarly the cable position can be determined for as many succeeding days as desired.

SECTION 31

ACCOUNTING PRINCIPLES

CONTENTS

Voucher Systems

Reserves and Funds

Accruals and Deferred Charges

The Working Sheet

(For list of forms, see complete table of contents.)

SECTION 31

ACCOUNTING PRINCIPLES

Fundamentals

DEBIT AND CREDIT.—The rules for debits and credits are as follows:

1. Debit wealth received by us.
2. Debit expenses incurred by us.
3. Debit losses incurred by us.
4. Credit wealth surrendered by us.
5. Credit debts incurred by us.
6. Credit profits made by us.

Debit and Credit Rules Illustrated.—These rules are illustrated by the following examples:

Purchases (wealth received—Rule 1)	$500	
Anson Company (debt incurred—Rule 5)		$500
For purchase of goods on credit.		
Cash (wealth received—Rule 1)	$200	
Sales (wealth surrendered—Rule 4)		$180
Profit and Loss (profit made—Rule 6)		20
For sale of goods, profit being shown separately.		
Cash (wealth received—Rule 1)	$ 80	
Profit and Loss (loss incurred—Rule 3)	20	
Sales (wealth surrendered—Rule 4)		$100
For sale of goods, loss being shown separately.		
Profit and Loss (loss incurred—Rule 3)	$200	
Purchases (wealth surrendered—Rule 4)		$200
Record loss of goods due to fire.		
James Thompson (wealth received—Rule 1)	$300	
Sales (wealth surrendered—Rule 4)		$200
Profit and Loss (profits made—Rule 6)		100
Record sale and profit made thereon.		
Profit and Loss (expense incurred—Rule 2)	$ 30	
Cash (wealth surrendered)		$ 30
For payment of rent expense.		

In the above illustrations the profit and loss element is separated from sales to bring out the differentiation which, in practice, is made at the end of the accounting period.

APPLICATION OF DEBIT AND CREDIT TO ASSET AND LIABILITY ACCOUNTS.—A set-up of a few accounts is given below, and such entries as are more frequently used are given.

The **cash account** is outlined below:

Cash

Debit: For amount of cash on hand at beginning. For all receipts or incoming items.	**Credit:** For all disbursements or outgoing items.

The transactions with cash are self-explanatory, and the balance represents an asset.

Accounts receivable accounts are outlined below:

(Name of Customer)

Debit: For amount he owes us at beginning. For goods sold to him on account.	**Credit:** For money he pays us on account. For notes he gives us on account. For goods he returns to us. For discount we give him. For claims we allow him.

The balance of this account is an asset, representing what the customer owes us

Fixed asset accounts are set up according to the following outline:

(Name of Account)

Debit: For full cost to the business in position ready for use.	**Credit:** For sale or loss, at cost price.

The charge to this account should include all expenditures necessary to secure full title and to place the asset in position ready for use, such as freight, cartage, and placement costs. If a part or all of the asset is sold at purchase price, balance shows pro rata cost of part left. If it is sold at a profit, cost is credited in the account and excess of selling price above cost is carried to a profit and loss or nominal account. If the asset sells at a loss, this account is credited with the amount received therefor and with the difference between this sum and the cost of the asset. This difference represents loss, and is charged to a profit and loss account.

Accounts payable accounts are outlined below

(Name of Creditor)

Debit: For money paid to creditor on account. For notes given him on account. For goods returned to him. For discounts he gives us. For claims he allows us.	**Credit:** For amount we owe creditor at beginning. For goods sold us on account by creditor.

APPLICATION OF DEBIT AND CREDIT TO PROPRIETORSHIP ACCOUNTS.—Proprietorship accounts record the effects of business transactions upon net worth or proprietorship. The receipt of income and the payment of expenses result, respectively, in increase and decrease of proprietorship. These increases and decreases are recorded temporarily in income and expense accounts. At close of the fiscal period these accounts are summarized to determine net effect of all transactions on net worth or proprietorship. **Temporary proprietorship accounts** are used to record immediately the results of transactions and influences. If the business is successful these result in a profit. They set forth in detail the efforts to make a profit. **Vested proprietorship accounts** record the summarized results of these transactions and influences. They record the original investment and its subsequent net increases and decreases. Income and expense accounts are set up to record temporarily proprietorship changes. Later their balances are transferred, by a process of summarization, to the vested proprietorship accounts.

Income accounts are outlined thus:

(Name of Account)

Debit: For all deductions from yield shown contra. For transfers to Profit and Loss.	**Credit:** For the yield.

As shown in the outline, items representing yield appear on the credit side of income accounts. When debits are required they indicate: (1) adjustments of overstatements of amount of yield as originally credited; (2) adjustments of errors in originally crediting items of income to a given account; and (3) transfers to a summary account for purposes of closing at the end of accounting periods.

Expense accounts are outlined thus:

(Name of Account)

Debit: For cost incurred.	**Credit:** For any deductions from cost.

In general, the principles governing debits and credits to expense accounts are the same as those governing debits and credits to income accounts, except that the situation is reversed.

Vested proprietorship accounts are outlined as follows:

(Name of Account)

Debit: For items transferred or withdrawn.	**Credit:** For items invested.

The proprietorship account passes under various titles. In case of a sole proprietorship it consists of the name of the proprietor plus the suffix "Capital," as "John Doe, Capital." The same designation is used in case of partnerships,

but there are as many proprietorship accounts as there are partners. In corporation accounting the "Capital Stock" and "Surplus" accounts perform the function of showing proprietorship. Ordinarily the capital account shows no change until the end of the period, when net increase or decrease of wealth for the period is transferred to it. In case of sole proprietorships and partnerships, **personal accounts** are kept in which more or less regular withdrawals of cash or merchandise and like transactions are recorded. Withdrawals are shown on the debit side, also payment of the proprietor's personal debts. On the credit side are shown the temporary investment of funds in the business, and retention by the business of funds belonging to the proprietor.

APPLICATION OF DEBIT AND CREDIT TO MIXED ACCOUNTS.—The term "mixed account" is applied to accounts which possess a mixed character, i.e., contain both real and nominal elements. Many accounts begin the fiscal period as real accounts but take on a mixed character as time passes. This is illustrated by the Machinery account, which becomes a mixed account through the effects of depreciation. Effect is given to this in the account only periodically because of the impossibility of making daily allowance therefor.

The **Merchandise account** in its original form is an illustration of the mixed account. Assume the case of a sale of merchandise, costing $10, for $15. Theoretically, the sale price $15 can be split up into two parts, $10 covering cost price, $5 representing profit. But as the old Merchandise account is used, the entire $15 is credited to it. The Merchandise account thus used becomes a **mixed** account. It is outlined as follows:

Merchandise

Debit: For goods on hand at beginning of period. For purchases, including freight-in and drayage. For returned sales. For sales rebates and allowances.	**Credit:** For sales. For returned purchases. For purchases, rebates and allowances.

At the end of each accounting period the inventory as at that time is credited in the Merchandise account, after which the account becomes purely nominal, representing either gross profit or loss on sales. Under modern methods the old form of Merchandise account has been abandoned largely, separate accounts being kept for the distinctive elements formerly entering into the one account.

Assets subject to depreciation are the subject matter for another class of mixed accounts. The amount of depreciation is estimated at the close of each period. This constitutes an expense which must be deducted from the old balance of the account in order to reduce it again to a **real** basis. Depreciation occurs daily but cannot be recorded daily, which accounts for the fact that accounts for wasting assets are mixed accounts except on the dates when the necessary adjustments are made to separate the nominal and real elements thereof. In order to leave the account for such an asset in its original condition, it is customary to credit a **depreciation reserve** instead of the asset account itself. To secure a true valuation of the asset account, it must be considered in connection with its corresponding depreciation reserve. The depreciation reserve is sometimes called a **valuation reserve.** These principles are illustrated as follows:

Building

1922 Jan. 1 . . . . $25,000	

Reserve for Depreciation of Building

	1922 Dec. 31 . . . . $1,000 1923 Dec. 31 1,000

At the end of 1923 the building has depreciated $2,000 and possesses a theoretical value of $23,000.

The Financial Statement

THE PROPRIETORSHIP EQUATION.—The proprietorship equation is expressed thus:

Assets − Liabilities = Proprietorship, or
Assets = Liabilities + Proprietorship

Proprietorship is the difference between assets and liabilities, being positive when assets exceed liabilities and negative when liabilities exceed assets. When there are no liabilities the equation becomes:

Assets = Proprietorship

If the assets consist entirely of cash, $10,000 the equation is:

Assets ($10,000 in cash) = **Proprietorship** ($10,000)

If the assets consist of cash $1,000, real estate $3,000, and merchandise $4,000, and liabilities consist of accounts payable amounting to $3,500, the equation is:

Assets		Liabilities and Proprietorship	
Cash	$1,000	Accounts Payable	$3,500
Real Estate	3,000	Proprietorship	4,500
Merchandise	4,000		
	$8,000		$8,000

This may be expressed also in the following form:

Assets		
Cash	$1,000	
Real Estate	3,000	
Merchandise	4,000	
Total Assets		$8,000
Liabilities		
Accounts Payable	$3,500	
Total Liabilities		3,500
Proprietorship		
Net Worth		$4,500

THE BALANCE SHEET.—When arranged according to conventional rules the proprietorship equation becomes the balance sheet. The purpose of the balance sheet is to show the financial condition of a business at any time. Although the balance sheet shows the financial condition of a business at a given date, it does not afford all data necessary for the interpretation of the results of a business over a period of time. The balance sheet may be discussed under the two titles of **form** and **content.**

By **form** of a balance sheet is meant its arrangement and the classification of its items. There is no standard form, and in general the form of the balance sheet depends upon the purpose to be served. Sometimes other expressions are employed in place of the expression "Balance Sheet," as, "Statement of Assets and Liabilities," or "Financial Statement." The title of the balance sheet should show clearly to what firm or company it belongs and to what date it applies, as:

The Brooklyn Edison Company
Balance Sheet, as at December 31, 19—

Since the chief use of a balance sheet is to show the degree of solvency or insolvency of a business for purposes of credit granting, the arrangement must be subordinated to that end. Solvency is determined not simply by the quantity of assets but also by the amounts of the different classes of assets and the relationship which they bear to the liabilities. If funds are tied up in form of fixed assets, they are useless for liquidation of current liabilities. Items in a balance sheet should be so arranged that the application of assets to liabilities will be clearly indicated. Usually debts are paid in cash and fall due at definite dates. Arrangements must be made to meet these obligations at maturity. The cycle of operations must be so arranged as to provide funds to meet debts as they fall due. Occasionally it becomes necessary to borrow at a bank, in which case the bank demands a balance sheet showing the credit status of the borrower.

Cash is the most liquid asset. Next in order usually come **notes receivable** because these can be converted into cash when properly indorsed. Next, ordinarily, come **accounts receivable**, and finally **merchandise.** These constitute the **current assets.** Usually items may be regarded as current if convertible into cash within six months from date, although in case of manufacturers this period may be considerably longer. Sometimes **investments** in stocks or bonds of other companies are included among current assets. This is correct if they are readily convertible into cash.

The corresponding liabilities which these assets are used to liquidate are **notes payable, accounts payable** and **accrued expenses.** Debts maturing within a given time, as six months or one year, may be regarded as **current liabilities.** Excess of current assets over current liabilities is **working capital.** By a rule-of-thumb standard sometimes adopted current assets should be twice the amount of current liabilities.

Deferred charges constitute another important subdivision of assets. Items such as stationery, fuel, and supplies are known as expense assets and the unexpired debits to these accounts are deferred charges.

Fixed assets are assets not to be resold. They usually comprise plant, furniture, fixtures, delivery equipment, etc. Corresponding to these among the liabilities are the **fixed liabilities,** usually comprising debts maturing after one year from date.

Other assets is an additional group sometimes employed to contain items which for some reason cannot be included in the above groups. Similarly a division for **other liabilities** may be required.

By **content** of a balance sheet is meant: (a) inclusion of all assets and liabilities, and (b) their correct valuation. The correct valuation consists in including them at a figure which may be regarded as conservative in view of all the circumstances. Thus in case of accounts receivable there are invariably some which prove uncollectible. Allowance must be made for this on the basis of past experience in this and similar enterprises. The merchandise inventory must be valued according to approved methods, the customary formula being, cost or market, whichever is lower. In case of deferred charges the amounts must be periodically reduced that reduced values may be accurately shown.

FINANCIAL STATEMENT ILLUSTRATED.—The balance sheet of a partnership shown in Form 1 illustrates much of the foregoing.

Allen & Thomson
Balance Sheet, as at December 31, 1923

Assets			
CURRENT ASSETS:			
Cash		$ 3,127.00	
Accounts Receivable	$7,900.00		
Less—Reserve for Bad Debts	200.00	7,700.00	
Merchandise		11,000.00	$21,827.00
DEFERRED CHARGES:			
Unexpired Insurance		$ 200.00	
Supplies		400.00	600.00
FIXED ASSETS:			
Buildings	$10,300.00		
Less—Reserve for Depreciation	200.00	$10,100.00	
Furniture and Fixtures	1,000.00		
Less—Reserve for Depreciation	50.00	950.00	
Land		4,000.00	15,050.00
TOTAL ASSETS			$37,477.00
Liabilities			
CURRENT LIABILITIES:			
Notes Payable	$4,000.00		
Accounts Payable	3,200.00		
Wages Accrued	320.00	$ 7,520.00	
FIXED LIABILITIES:			
Mortgage on Buildings		4,000.00	
TOTAL LIABILITIES			11,520.00
Proprietorship			
A. J. ALLEN, CAPITAL		$15,000.00	
P. O. THOMSON, CAPITAL		10,957.00	$25,957.00

FORM 1. Balance Sheet of Partnership

It is sometimes desirable to set balance sheets as at the beginning and end of an accounting period in juxtaposition to permit comparison of similar items. This is illustrated in Form 2.

James Gorman
Comparative Balance Sheet
As at December 31, 1922, and December 31, 1923

	1923	1922	Increase or Decrease
Assets			
CURRENT ASSETS:			
Cash	$ 725.00	$ 920.00	−$ 195.00
Notes Receivable	200.00	150.00	+ 50.00
Accounts Receivable	5,920.00	6,235.00	− 315.00
Merchandise	9,000.00	8,725.00	+ 275.00
	$15,845.00	$16,030.00	−$ 185.00
FIXED ASSETS:			
Store Fixtures	$ 500.00	$ 430.00	+$ 70.00
Delivery Equipment	300.00	320.00	− 20.00
	$ 800.00	$ 750.00	+$ 50.00
Total Assets	$16,645.00	$16,780.00	−$ 135.00
Liabilities			
CURRENT LIABILITIES:			
Notes Payable	$ 500.00	$ 470.00	+ 30.00
Accounts Payable	7,230.00	8,727.00	− 1,497.00
Accrued Wages	320.00	200.00	+ 120.00
Total Liabilities	$ 8,050.00	$ 9,397.00	−$1,347.00
Proprietorship			
JAMES GORMAN, CAPITAL	$ 8,595.00	$ 7,383.00	+$1,212.00

FORM 2. Comparative Balance Sheet of Proprietorship

Net worth shows an increase of $1,212, which is accounted for by a net decrease in assets of $135 and a net decrease in liabilities of $1,347.

Books of Original Entry

RECORDING FINANCIAL TRANSACTIONS.—Every financial transaction can be recorded in form of a journal entry. The usual form of journal entry is illustrated thus:

Cash	$100	
Sales		$100

Which represents an application of the rules of debit and credit. "Cash" is debited because it represents wealth received by the business. "Sales" is credited because it represents wealth surrendered by the business. The arrangement of the journal entry is arbitrary, being the result of experience in attempting to express business transactions in the most convenient form. A form known as the **journal** has been contrived to contain such entries. A simple form of journal is shown in Form 3.

Journal

			L. F.	Dr.		Cr.	
		Cash		100	00		
		Sales				100	00

Form 3. Journal—Simple Form

SUBDIVISION OF THE JOURNAL.—Transactions occur on either a cash or a credit basis. According to this twofold classification the journal is subdivided into two parts, one employed to record cash transactions and the other to receive all other transactions. Journal entries may be classified as:

1. Those in which cash does not enter.
2. Those in which cash enters as a receipt.
3. Those in which cash enters as a disbursement.

On the basis of this classification it is customary to subdivide the original journal into two separate books, one the **general journal,** in which entries for all except cash transactions are made, and another known as the **cash journal,** or more frequently the **cash book,** in which cash transactions only are entered. The general journal may take the form shown above or it may vary more or less widely from it, depending upon circumstances.

During a single business day the number of sales is such that separate entry cannot be made for each in the general journal without involving unnecessary labor. It is customary now to limit the use of the general journal by setting up special journals to receive entries for purchases and sales, these being trans-

actions which ordinarily involve numerous entries similar in nature. The same principle may be extended to other groups of transactions if they are frequent enough to justify the step. If, for example, it is customary to receive settlement of customer's accounts in notes, a **notes receivable journal** may be desirable. Likewise a **notes payable journal** may be useful if many notes are given in settlement of purchases.

PURCHASES AND SALES JOURNALS.—A separate **purchases journal** is frequently employed in which are recorded all purchases of stock-in-trade.

Purchases Journal

Date		Explanation	L. F.				
19—							
Jan.	6	J. T. Sully					
		100 bu. corn @ $0.75		75	00		
		50 bu. wheat @ 1.00		50	00		
		10 cordwood @ 3.00	50	30	00	155	00
		Terms 2/10, n/60.					
	7	L. G. Luther					
		300 bu. oats @ $0.40		120	00		
		100 bu. corn @ 0.75	54	75	00	195	00
		Terms 2/10, n/30.					
	8	C. D. Hanover					
		20 bu. wheat @ $1.00	58			20	00
		Terms 2/10, n/30.					
	31	Purchases, Dr.	125			370	00

Form 4. Purchases Journal

Sometimes this takes the form of an **invoice book.** Sometimes, too, the purchases journal is made to record miscellaneous purchases as well as purchases of stock-in-trade. In this case it is usually given the form of the **voucher register** or the **accounts payable register,** explained elsewhere. All types of purchases may be regarded as a debit to purchases and a credit to the vendor, regardless of the method of payment pursued. Since all debits are to "Purchases," in making the current entry the formal debit element may be omitted. The debit is set up as a total at the end of the month, and the principle of equal debits and credits is thus fulfilled. In simple form the purchases and sales journals are the same as the general journal. Provision is made for date, classification, explanation, ledger folio index, and two money columns. The first money column is used for detailed extensions and the second one for the total of each purchase. (See Form 4.) Below are shown three purchases and their entries in the purchases journal:

Jan. 6, 19—, from J. T. Sully, 2/10, n/60.
 100 bu. corn @ $0.75
 50 bu. wheat @ 1.00
 10 cord wood @ 3.00

Jan. 7, 19—, from L. G. Luther, 2/10, n/30.
 300 bu. oats @ $0.40
 100 bu. corn @ 0.75

Jan. 8, 19—, from C. D. Hanover, 2/10, n/30.
 20 bu. wheat @ $1.00

It is usually preferable to use some such form as illustrated in Form 5, which provides for the file number of the original invoice (560 B, 569 B, 570 B, etc.) in place of the details given in the above form.

Purchases Journal

Date		Inv. No.	Name		Terms	Folio		
19—								
Jan.	6	25	J. T. Sully	560B	2/10, n/60		155	00
	7	26	L. G. Luther	569B	2/10, n/30		195	00
	8	27	C. D. Hanover	570B	2/10, n/30		20	00

FORM 5. Purchases Journal—Modern Type

In **posting** the purchases journal, the credits to vendor accounts should be posted daily in order that their accounts may be kept up to date. The debit to purchases is posted at the end of each month, after the total of purchases for the month is ascertained. This brings the ledger into equilibrium. The **ledger folio** column is for entry of the ledger page to which the posting is made. The ledger contains a similar folio column for entry of page of the journal from which the posting is made.

Purchases Journal

Date			L.F.	Dept. A		Dept. B		Dept. C		Totals	
				5,912	70	437	80	3,125	09	9,475	59
		Purchases Dept. A, Dr.								5,912	70
		" " B, "								437	80
		" " C, "								3,125	09

FORM 6. Departmental Purchases Journal

Dr. **Cash Receipts**

Date		Explanation	L. F.	Amount Columns			
19—							
Jan.	1	Balance bro't for'd	√			2,500	00
	2	Cash Sales	20	172	00		
	3	A. B. Southey on acct.	12	50	00		
	5	Investment Income	30	170	00		
		Cash Dr.				392	00
						2,892	00
Jan.	5	Balance				2,546	00

FORM 7a. Cash Book (left-hand page)

Departmentalization of a business necessitates certain modifications in form of purchases journal to permit the segregation of purchases by departments. Form 6 is illustrative.

The **sales journal** is practically identical in form with the purchases journal and subject to the same variations in form. When posting to the ledger "Sales" is credited and the customer is charged. When sales are for cash an account may be opened with the customer as in case of charge sales, and then be immediately closed as an offset to the debit to cash. To keep accounts of customers up to date, postings of sales are made daily. At end of month a summary entry is made in sales journal for total sales for month, which, when posted to credit of "Sales," brings the ledger into equilibrium. Closing rulings are made as in case of the purchases journal.

THE CASH BOOK.—The two journals required to record cash receipts and disbursements, respectively, are usually combined in one book, known as the **cash book,** the pages for each alternating throughout the book. Cash receipts are entered on the left-hand page and cash payments on the right-hand page. A simple form of cash book is shown in Forms 7a, 7b.

Function of Cash Book.—The cash book takes the place of a detailed cash account in the general ledger, only the total receipts and payments being posted periodically to the cash account. Sometimes no postings are made to a cash account in the ledger, in which case the cash book is regarded as a cash account and its balance is included when a trial balance of the ledger is taken. On the

Cash Payments Cr.

Date		Explanation	L. F.	Amount Columns			
19—							
Jan.	1	Rent for month	3	40	00		
	2	Advertising	6	31	00		
	3	Mr. Arthur on acct.	8	200	00		
	4	Wages	12	75	00		
		Cash Cr.				346	00
		Balance				2,546	00
						2,892	00

Form 7b. Cash Book (right-hand page)

debit side of the cash book the debit element is indicated merely by the fact that the entry appears on the left-hand page. Likewise on the credit side the credit element is indicated by the mere presence of the entry. The manner of posting is indicated in the above form. The method of balancing and ruling is also shown. When the record is to be carried forward to new pages, either the current pages may be balanced and ruled, only the balance being carried forward, or the current pages may be totaled and the totals carried forward. Both sides are closed and ruled simultaneously even though one page may not be entirely used. This always keeps current receipts and disbursements in juxtaposition.

Cash shorts and overs sometime occur when the cash book is balanced and the cash on hand and in bank fail to agree with the cash book balance. If the

Dr. **Cash Receipts**

Date		Explanation	L.F.	Sundry	Cash Sales	Acc'ts Receivable	Discount on Sales	Net
19—								
Jan.	1	Balance bro't for'd	✓	6,000 00				6,000 00
	2	Sales			246 81			246 81
	5	L. O. Southey inv. 12/27 at 2/10	33			500 00	10 00	490 00
	6	Sales	✓		310 40			310 40
	7	Sales	✓		287 00			287 00
				6,000 00	844 21	500 00	10 00	7,334 21
		Total	✓					7,334 21
		Deduct balance July 1	✓					6,000 00
		Cash, Dr.	4					1,334 21
		Discount on Sales, Dr.	16					10 00
July	8	Balance	✓	6,641 21				6,641 21

FORM 8a. Columnar Cash Book—Debit Side

discrepancy cannot be located, an entry is made to bring the cash book balance into agreement with the actual balance. This debit or credit is to a **Cash Short and Over** account. Later if the discrepancy is located the adjustment is made through the same account. The Short and Over account should be regarded as an income or expense account according as its balance at the close of the accounting period is a credit or a debit balance. Sometimes this account is treated as an asset or liability account.

Cash purchases may be cleared through the vendor's account as are credit purchases. A shorter method is as follows:

Make a record of the purchase in both purchases journal and cash book, but do not post any credit to cash from the purchases journal and do not post any charge to purchases from the cash book.

Columnar Cash Book.—It is sometimes desirable to simplify postings by segregating certain classes of cash transactions. Thus of all items of cash

receipts, usually a large percentage consists of cash sales and of receipts from customers. To accommodate these numerous items additional columns may be provided on the debit side of the cash book. Under this plan all cash receipts are entered in the **net** or **total** column and are then distributed to the proper special column, cash sales to the cash sales column and receipts from customers to the accounts receivable column. Similarly an analysis of cash disbursements may be accomplished. Two special columns frequently found on the credit side are those for creditors and for expenses. Any particular class of expenses, if the items are sufficiently numerous, may be given a separate column. If cash purchases are numerous a special column may be employed for them. These special columns are particularly important when separate ledgers are used for accounts receivable and accounts payable. Frequently sales and pur-

Cash Payments Cr.

Date		Explanation		L.F.	Sundry	Expenses	Acc'ts Payable	Disc't on P'rchases	Net
19—									
July	1	Rent for month		21		80 00			80 00
		Purchases	from A. Andrews	√	225 00				225 00
	2	Advertising		16		25 00			25 00
	3	K. K. Custer	on acct.	44			80 00		80 00
	4	Wages	for wk. ending 7/4	11		200 00			200 00
	5	Furniture & Fixtures	6 chairs	18	24 00				24 00
	6	Purchases	from D. Jones 2% off	√	50 00			1 00	49 00
	7	Supplies	stationery	8		10 00			10 00
		Balance							6,641 21
					299 00	315 00	80 00	1 00	7,334 21
		Cash Cr.		4					694 00
		Discount on Purchases Cr.		22					1 00

Form 8b. Columnar Cash Book—Credit Side

chases are made on a cash discount basis, as, 2% off if payment is made in 10 days. These may be cared for in the cash book by introducing a column on the credit side for **discounts on purchases** and a column on the debit side for **discounts on sales.** These various points are illustrated in Forms 8a, 8b.

THE MODERN JOURNAL.—Although the use of a cash book and purchases and sales journals takes much detail out of the general journal, there yet remain many transactions and adjustments which can be booked only in the general journal. Among these are transactions involving notes receivable and payable and the opening, closing, and adjusting entries. To meet the requirements for such entries the analytical journal has been developed. This is used to enable the efficient collection of totals which are to be posted to ledger controlling accounts and to aid in the operation of a system of controlling accounts. Form 9 is an illustration. The columns may be varied to suit requirements. Sometimes an account receivable column on the debit side and an account payable column on the credit side are desirable in addition to the ones shown.

Journal

Accounts Payable	Sundry	Date 19—		Explanation	L.F.	Sundry	Accounts Receivable
	600.00	Jan.	20	Notes Receivable	6		
				To L. R. Nash	15		600.00
				Note due in 6 mos. at 6 %, in payment of bill of 6/12/22			

Form 9. Divided Column Journal

The Ledger

THE LEDGER ACCOUNT.—The ledger is a record in which accounts are kept. An account collects in compact and legible form all data relative to the influence or thing to which it refers. There are two general classes of accounts—real and nominal. **Real accounts** record assets, liabilities, and proprietorship. **Nominal accounts** record gains, expenses, and losses. Each account is composed of two parts, or right and left sections. (See Form 10.) The account head or title is placed immediately over the line which separates the two sections. The date columns are at the left of the sections. The year appears at the head of the date column. Following the date column is a wide column for explanatory matter. Next comes the folio column in which is placed the page of the journal from which postings are made. The last column in the section is the money column, which in practice is subdivided into columns for the digits.

Cash

19—			L.F.			19—			L.F.		
Jan.	1	S. T. North		210	20	Jan.	3	Wages		43	00
	5	Sales		45	00						

Form 10. Ledger

The account is designed to bring together all items relating to that account, and represents a summarization of this data. Items on one side of the account represent additions. Those on the other side represent subtractions. The difference between the two sides of the account is the **balance.** If the excess

is on the left-hand side of the account, it is a debit balance; if on the right-hand side, it is a credit balance. **Asset accounts** have balances on the left. Whenever an asset is increased the entry showing the amount of the increase is made on the left side of the account. For decreases in assets entries are made on the right side. **Liability accounts** show excess of items on the right side. Increases in liabilities are indicated by additional items entered on the right side. Decreases in liabilities are indicated by entries on the left side of liability accounts. The balances of proprietorship accounts are normally on the right side, as are also balances of income accounts. The balances of expense accounts are usually on the left side. The ledger accounts taken together form an equation similar to that represented by the balance sheet or financial statement, but in addition to the asset, liability, and proprietorship items entering into the balance sheet there are also income and expense accounts, which affect proprietorship as well as assets and liabilities, but whose effect is determined accurately only at the end of accounting periods.

A **classification of accounts** based upon the requirements of an enterprise is one essential feature of a system of accounts. The asset, liability, proprietorship, and income and expense accounts must be such as represent an intelligent and logical analysis of these large groups of accounts. The classification of accounts which follows has been adopted by the Committee on Industrial Accounting and Executive Reports, Boston Chamber of Commerce. It is not intended to fit the requirements of any particular concern or industry, but to illustrate broadly the representative accounts used in manufacturing industries. For definitions of accounts reference should be made to the section on "Glossary."

CLASSIFICATION OF LEDGER ACCOUNTS

I—Assets and Deductions from Assets

A. Current Assets
- 1. Cash
  - (a) Petty Cash
  - (b) Cash on Hand
  - (c) Demand Deposits in Banks
    - (1) Domestic
    - (2) Foreign
- 2. Liquid Investments
  - (a) Time Deposits
  - (b) Certificates of Deposit
  - (c) Negotiable Stocks
  - (d) Negotiable Bonds
- 3. Receivables
  - (a) Accounts Receivable
    - (1) Customers
    - (2) Sundry Debtors
  - (b) Amounts due from parent, subsidiary, or affiliated companies.
  - (c) Personal Accounts
    - (1) Officers
    - (2) Partners
    - (3) Employees
  - (d) Notes Receivable
    - (1) Customers
    - (2) Sundry Debtors
  - (e) Intercompany Notes Receivable
  - (f) Personal Notes Receivable
    - (1) Officers
    - (2) Partners
    - (3) Employees
  - (g) Acceptances
    - (1) Trade
    - (2) Bank
- 4. Inventories
  - (a) Raw Material
  - (b) Supplies
    - (1) Factory
    - (2) Commercial
  - (c) Work in Process
    - (1) Stock
    - (2) Special Order
  - (d) Finished Product
    - (1) Stock
    - (2) Special Order
  - (e) Purchases for Resale
  - (f) Perishable Equipment

B. Fixed Assets
- 1. Real Estate
  - (a) Operating
    - (1) Land
    - (2) Land Improvements

- (3) Buildings
  - (a) Buildings Proper
  - (b) Plumbing and Sanitary Fixtures
  - (c) Heating and Ventilating Equipment
  - (d) Wiring and Piping
- (b) Non-operating
  - (1) Tenements
  - (2) Club Houses
  - (3) Parks and Recreation Grounds
  - (4) Miscellaneous

2. Power Equipment
   - (a) Plant
   - (b) Transmission
3. Machinery
4. Tools
   - (a) Machine
   - (b) Hand
5. Transportation Equipment
6. Furniture
   - (a) Plant
   - (b) Office
7. Non-Operating Equipment
   - (a) Equipment of Tenements and Clubhouses
   - (b) Lunchroom and Hospital Equipment
   - (c) Miscellaneous Non-operating Equipment
8. Other Tangible Property
   - (a) Patterns
   - (b) Drawings
   - (c) Miscellaneous
9. Miscellaneous Equipment

C. Securities

- (a) For Investment
  - (1) Bonds
  - (2) Stocks
  - (3) Leases
  - (4) Mortgages
- (b) For Control
  - (1) Stocks
  - (2) Subsidiary Securities

D. Intangible Assets

1. Patents
2. Trade-Marks
3. Good-Will

E. Miscellaneous Assets and Deferred Accounts

1. Deferred Charges to Operations
   - (a) Unexpired Insurance
   - (b) Prepaid Rent
   - (c) Prepaid Interest
   - (d) Other Prepaid Accounts
2. Cash Value of Life Insurance
3. Accrued Earnings
   - (a) Interest Receivable
   - (b) Rent Receivable
4. Claims Receivable
   - (a) Insurance
   - (b) Damages
5. Organization Expenses
6. Capital Deficit (deductions from Net Worth)

F. Allowances for Depreciation of Fixed and Real Assets

1. Depreciation (deductions from corresponding assets)
   - (a) Buildings
     - (1) Buildings Proper
     - (2) Plumbing and Sanitary Fixtures
     - (3) Heating and Ventilating Equipment
     - (4) Wiring and Piping
   - (b) Non-operating Property
     - (1) Tenements
     - (2) Clubhouses
     - (3) Parks
     - (4) Miscellaneous
   - (c) Power Equipment
     - (1) Plant
     - (2) Transmission
   - (d) Machinery
   - (e) Tools
     - (1) Machine
     - (2) Hand
   - (f) Transportation Equipment
   - (g) Furniture
     - (1) Plant
     - (2) Office
   - (h) Non-operating Equipment
     - (1) Equipment of Tenements and Clubhouses
     - (2) Lunchrooms and Hospital Equipment
     - (3) Miscellaneous Non-operating Equipment
   - (i) Other Tangible Property
     - (1) Patterns
     - (2) Drawings
     - (3) Miscellaneous
   - (j) Miscellaneous Equipment
2. Miscellaneous Allowances affecting other Assets

II—Liabilities

A. Current Liabilities
  1. Accounts Payable
  2. Notes Payable
  3. Dividends Payable
  4. Interest Payable
  5. Other Payables
  6. Accrued Expenses
    (a) Wages
    (b) Taxes
    (c) Insurance
    (d) Interest
    (e) Rent
    (f) Others

B. Funded Liabilities
  1. Long-time Notes
    (a) Secured
    (b) Unsecured
  2. Mortgages Payable
  3. Bonds
  4. Debentures

C. Capital Liabilities
  1. Stock
    (a) Par
      (1) Preferred
      (2) Common
    (b) No-par
    (c) Premium Surplus and (or) Capital Surplus
  2. Surplus
    (a) General
  3. Undivided Profits

D. Reserves to Meet Expected Losses or Expected Liabilities
  1. Bad Debts
  2. Claims
  3. Taxes
  4. Interest
  5. Foreign Deposits
  6. Losses in Inventory
  7. Miscellaneous

E. Treasury Stock
  1. Preferred
  2. Common

F. Sinking Fund Investments and Debits to Funded Debt
  1. Pledged Assets
  2. Miscellaneous

G. Contingent Liabilities
  1. Purchase Commitments
  2. Accounts Receivable Discounted
  3. Notes Receivable Discounted
  4. Guaranteed Bonds and Notes of Subsidiaries

III—Profit and Loss

A. Sales
  1. Gross Sales
  2. Returns
  3. Rebates
    (a) Shortages
    (b) Damages
    (c) Factory Errors
    (d) Commercial Office Errors
    (e) Salesmen's Errors
    (f) Transportation Claims
    (g) Policy Allowances (customers' errors)
    (h) Miscellaneous Reasons
  4. Collected Discounts
  5. Transportation Deductions
    (a) F.o.b. Allowances
    (b) Miscellaneous Allowances
    (c) Prepaid Charges (deductions from Sales)
      (1) Freight
      (2) Express
      (3) Miscellaneous

B. Cost of Goods Sold
  1. Processed Products
    (a) When cost of product is determined by dependable cost system:
      (1) Having a Controlled Operating Ledger
      (2) Having the Accounts Carried in the General Ledger
    (b) When Cost is Determined by the Inventory Plan
  2. Purchases for Resale

C. Selling Expenses

Use Either One

1. First Alternative (expense classification)
   - (a) Salaries
     - (1) Officers and Department Heads
     - (2) Selling Force
     - (3) Engineering and Drafting Force
     - (4) Clerical Force
     - (5) Other Employees
   - (b) Rent, Light, Heat, and Power
   - (c) Office Equipment, Alterations, Repairs, and Replacements
   - (d) Traveling and Entertainment Expenses
   - (e) Telephone and Telegraph Expenses
   - (f) Postage
   - (g) Stationery and Office Supplies
   - (h) Advertising
   - (i) Miscellaneous Expense Accounts
2. Second Alternative (responsibility classification)
   - (a) By Functions
   - (b) By Location
   - (c) By Products

D. Other Income

1. Income from Investments
2. Income from Outside Buildings, Tenements, and Miscellaneous Properties
3. Interest from Notes Receivable
4. Income from Miscellaneous Sources

E. Charges to Other Income

1. Taxes, Maintenance and Depreciation of Outside Buildings, Tenements, and Miscellaneous Properties
2. Collection Charges
3. Miscellaneous Charges

F. General Expenses

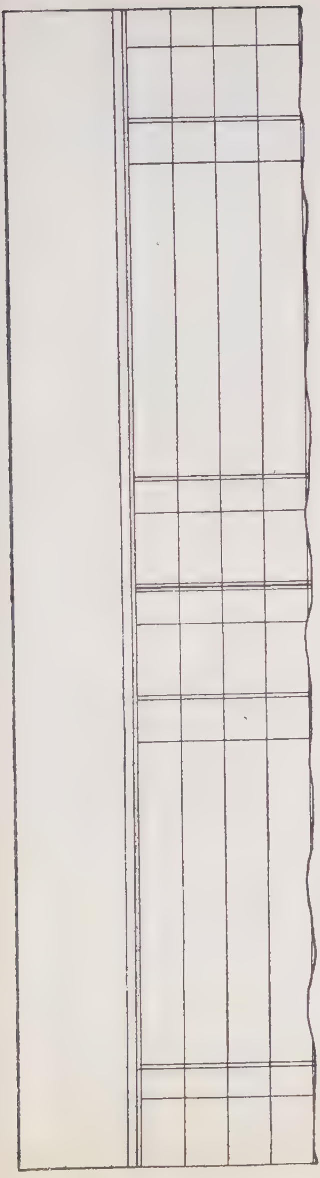
1. Administrative Expenses Not Previously Apportioned
2. Interest Paid and Accrued
   - (a) Interest on Funded Debt
   - (b) Interest on Other Obligations
3. Neglected Discounts
4. Losses on Bad Debts
5. Miscellaneous Expenses

G. Loss and Gain

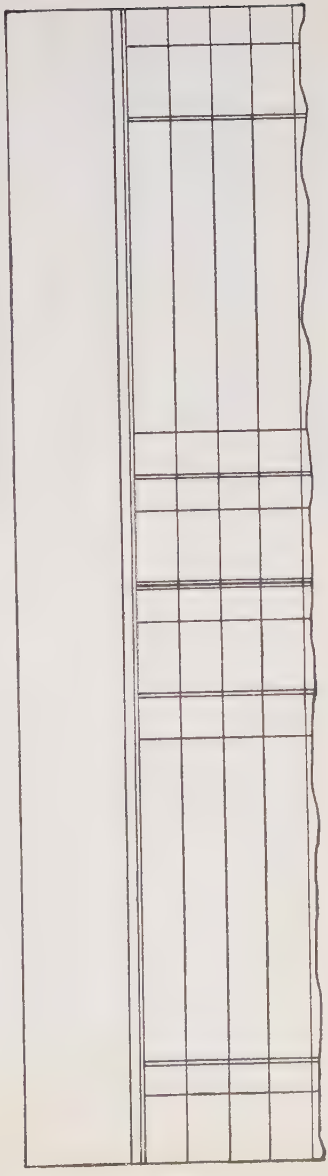
1. Adjustment Accounts
   - (a) Inventory Adjustment Accounts
   - (b) Idleness Accounts
   - (c) Miscellaneous Adjustment Accounts
2. Income Taxes
3. Profit and Loss Account
   - (a) Monthly Profit and Loss Account
   - (b) Cumulative Profit and Loss Account (for the year only)

The **principles of classification** are discussed in the section on "Classification." In any case there must be a broad classification into assets, liabilities and proprietorship accounts. But in addition there must be details as to kind of assets owned, liabilities owed, and sources of increments and decrements in proprietorship. The nature of the information desired must determine the amount of detail to be required. The classification must be logical and the titles of accounts therein should indicate their function clearly with little or no additional explanation. In matching transactions with accounts affected, first determine the main group of accounts affected, then determine the particular account.

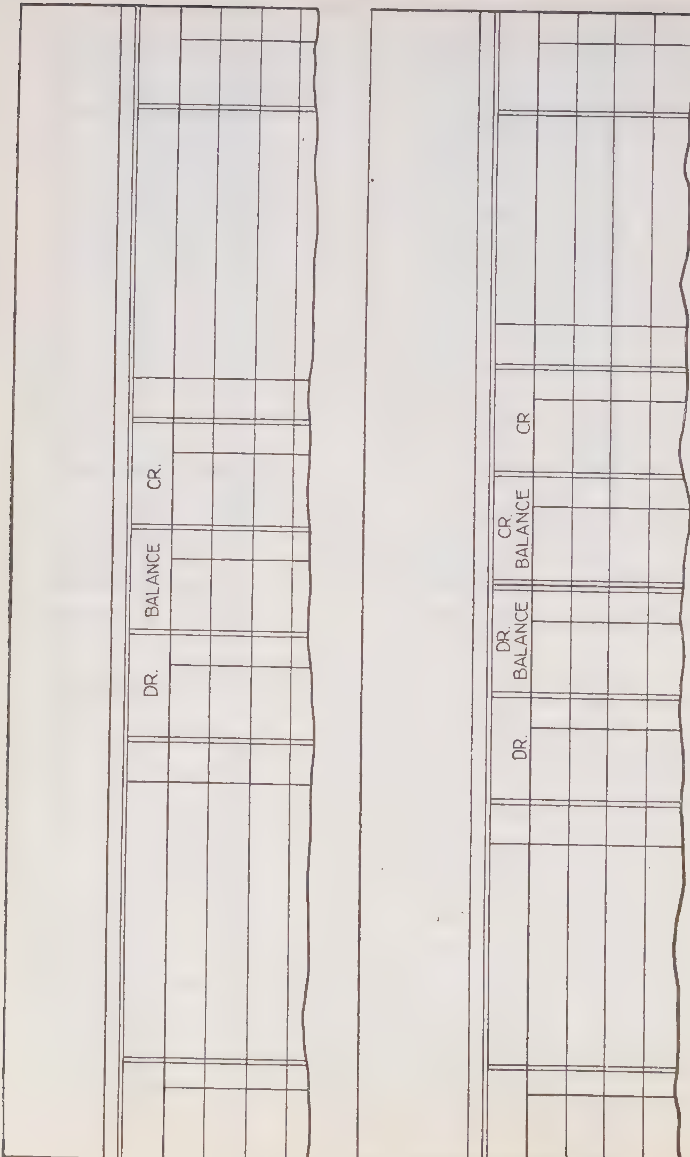
SUBDIVISION OF LEDGERS.—A single general ledger suffices only in case of comparatively small businesses. It soon becomes necessary to segregate certain classes of accounts in subordinate ledgers; the accounts thus treated first are in most instances those with customers and creditors. But the principle of segregation of accounts in subordinate ledgers may be carried out with as many different classes of accounts as conditions warrant. Sometimes a given class is further subdivided, as when accounts receivable are classified as "city" and "country," or "A to M" and "N to Z." Sometimes the ledgers for customers' accounts are arbitrarily subdivided on the basis of geographical districts.



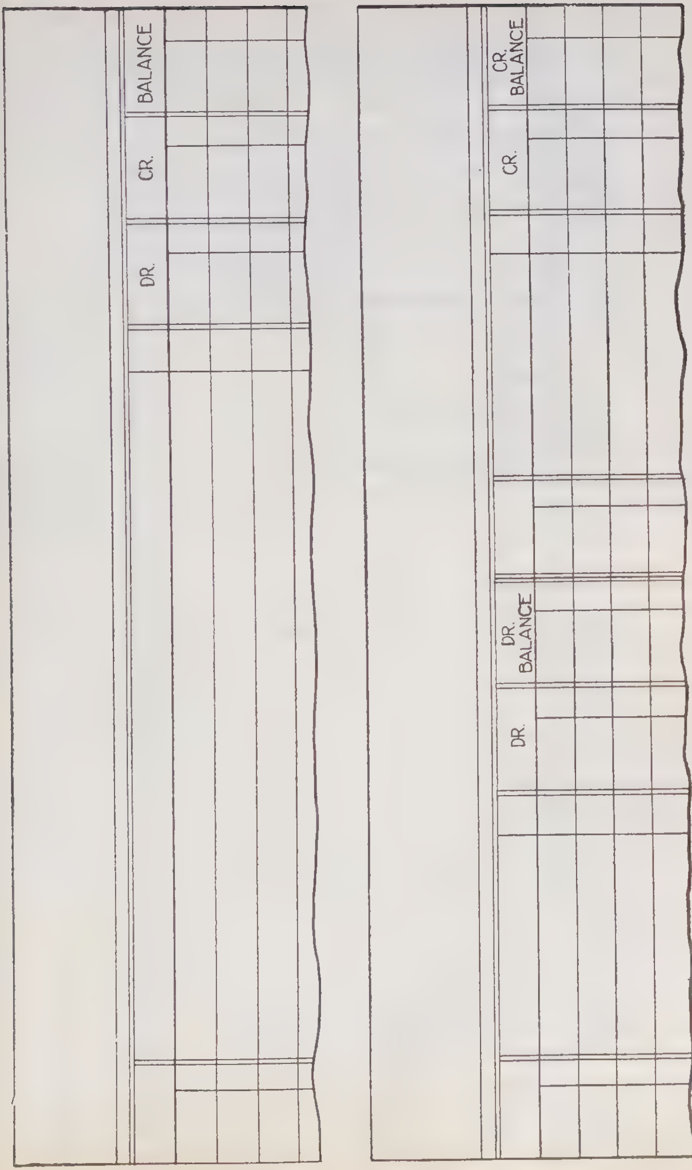
FORM 11. Standard Ledger—Divided Column



FORM 12. Standard Ledger—Center Column



Form 13. Balance Ledger Rulings



Form 14. Balance Ledger Rulings

DEPOSITORS		MONDAY			TUESDAY			WEDNESDAY		
NAMES	BALANCE	CHECKS	DEPOSITS	BALANCE	CHECKS	DEPOSITS	BALANCE	CHECKS	DEPOSITS	BALANCE
John Smith	500 00	200 00		300 00	150 00	1000 00	1150 00	etc.		

Form 15. Boston Ledger Sometimes Used for Depositors

KINDS OF LEDGERS.—As to **rulings,** ledgers are standard, balance, and progressive. (See Forms 11–15.) **Standard ruling** has two duplicate parts, debit and credit, division line usually being in center of page. (See Forms 11, 12.) **Balance ruling** is a three- or four-column ledger with money columns either at center or at right-hand margin, or at both center and right-hand margin (see Forms 13, 14). Extra columns are for account balances. If balance is usually either a debit or a credit, only one balance column is necessary; but if the balance is apt to change from a debit to a credit, or vice versa, both debit balance and credit balance columns should be provided. This form of ruling is particularly useful for personal accounts which require that the balance be kept up to date. When this ledger is used, entry of new debits or credits should always be made on next blank line as shown in balance column, to permit extension of new balance opposite the last entry even when the several preceding lines on the debit and credit sides are blank. The **progressive** form, sometimes known as the Boston or tabular (see Form 15), makes provision for progress horizontally according to time. Account title is written at left-hand margin of master sheet, and is sometimes repeated at right margin in case of very wide sheets. The page contains columns for each day of the period, short-margin insert sheets being bound in to provide room for an entire period.

As to **bindings,** ledgers are solid-bound, loose-leaf, and card. Loose-leaf and card ledgers possess greater flexibility than do bound books. They may be arranged according to any desired grouping and all dead material is easily discarded or filed away in reserve binders. Removal of leaves or cards makes it possible to subdivide clerical work. There is the danger, however, of failing to return a leaf or card which has been removed.

The Interpretative Process

PERIODIC WORK ON LEDGER.—The process of interpretation of data contained in ledger accounts is comprised under the following heads:

1. Taking a trial balance.
2. Making the adjusting entries.
3. Making the closing entries.

TAKING A TRIAL BALANCE.—A trial balance is taken, after all transactions applicable to the current accounting period have been posted to the ledger, by listing the debit and credit balances of all accounts. This furnishes mathematical proof of the accuracy of the work, but is not absolute proof that all items have been posted to the right accounts and does not detect certain offsetting errors. Before a trial balance is taken the accounts should all be totaled on each side, the totals being shown in small pencil figures directly beneath the last entry, sufficiently close up to it not to prevent making a regular entry on the line directly below. The difference between these two totals should be written in pencil in the explanation column on the side of the account having the larger total. Sometimes, however, it is desirable to **balance the account.** This is done by bringing in the balance on the side of the account having the smaller total and then ruling up the account, the totals on both sides now being equal. Form 16 indicates the procedure. On the line below the double ruling the balance is brought down on its proper side. For ruling the account, black ink is preferable to red ink. It is sometimes desirable to **transfer** an account from one page to another. This process is similar to balancing, but in place of the word "Balance" the words "Forwarded to page" should be used, the page to which it is transferred being entered in the folio

column. The name of the account appears on the page to which the transfer is made. The first entry is for the balance transferred, page reference to the old account being made in the folio column and the words "Forwarded from page" placed in the explanation column. A trial balance appears in Form 17.

Cash

19—						19—					
Jan.	1	Balance		4,310	40	Jan.	1	Purchases		400	00
	3	Sales		625	30		2	Purchases		20	00
	6	J. Astor		230	00		6	Delivery Equipment		100	00
	15	Sales		40	00		10	Wages		60	00
	27	Interest		60	00		12	Advertising		80	00
		4508.70		5,265	70		15	Supplies		12	00
							20	Expense		15	00
							29	Purchases		70	00
										757	00
								Balance		4,508	70
				5,265	70					5,265	70
July	30	Balance		4,508	70						

FORM 16. Balancing the Ledger Account

Trial Balance, June 30, 19—

X—Capital		$ 240,000
Y—Capital		160,000
Plant and Machinery	$ 187,500	
Material, per inventory, June 30, 19— [previous year]	102,625	
Sales		657,025
Purchases	240,000	
Labor	172,500	
Office Salaries	35,000	
Traveling Expenses	12,000	
Interest	3,000	
Stationery and Printing	875	
Rent and Taxes	21,000	
Discount and Allowances	11,250	
Fuel	23,000	
Insurance	875	
Freight Inward	8,750	
Commission	31,875	
Advertising	2,500	
Notes Receivable	30,575	
Notes Payable		5,500
Accounts Receivable	180,575	
Accounts Payable		39,250
Cash	37,875	
	$1,101,775	$1,101,775

FORM 17. Trial Balance

PERIODIC ADJUSTMENTS OF LEDGER.—At the end of an accounting period the ledger does not indicate conditions accurately because some of the accounts it contains are out of adjustment. Thus the depreciation of buildings and machinery which has occurred during the period has not been allowed for. Likewise some of the accounts receivable entered during the month will prove to be uncollectible. Other items may require adjustment. Certain expenses have accrued during the period and are not liquidated until some later period. Adjustments are necessary to show their status at the date of closing. Sometimes expenses are incurred the full benefit from which does not accrue until later periods. The value remaining in these at the end of the period is called a **deferred charge** and is in reality an asset. Sometimes income is received in advance in payment of services to be rendered in a succeeding period. Such income should not be credited to current income but is in the nature of a suspense item as at the close of the current period. Merchandise is bought at one price and sold at another. As a result an element of profit arises which can be determined only by making adjustments for the merchandise remaining on hand.

ACCRUALS AND DEFERRED CHARGES.—A frequent item of expense incurred for use of borrowed money is **interest.** When loans are made to others it is an item of income.

Interest is reckoned as a per cent per annum on the principal sum, and normally ranges from, say, 3% to 7%, depending on the risk involved. Interest is usually payable at regular intervals determined upon at the time the loan is made. Interest periods and accounting periods are co-terminous only in exceptional cases. If nominal accounts are closed at end of each month while interest payments are made semiannually, adjustments must be made for interest accruing during intervening months. To permit the proper distribution of the interest expense an **Accrued Interest** account is employed.

Assume that on Jan. 1, A borrows $6,000 for a term of years, interest at 5%, payable semiannually Dec. 31 and June 30. Interest amounts to $300 yearly, each semiannual amount being $150. The interest incident to each month is $25. The adjusting entry on January 31 is:

Interest	$25	
Interest Accrued		$25

When posted, Interest account is charged for the month's proportion of expense and the Interest Accrued records the liability thereon. This "interest accrued" does not become payable until the end of the 6-month period. It is a real account. If above entry is made each month for 6 months, there is $150 to the credit of "Interest Accrued" at the end of the interest period, when interest falls due. When paid the following entry is made:

Interest Accrued	$150	
Cash		$150

Wages and salaries may require some treatment as interest. Salaries are usually paid monthly and when so paid are charged to a Salaries account. When not paid monthly and the period of accrual is not co-terminous with the accounting period, the theory of accruals applies. **Wages** are usually paid weekly or semimonthly. As a rule, monthly accounting periods do not terminate on same day as do wage periods, in which case there is an overlapping of wages expense in a weekly or semimonthly period which extends from one month into the next.

Assume that a merchant pays his assistants semimonthly. One pay-day

falls on June 7. Profit and loss for May must be charged for wages accruing during last week of May, although not due until June 7. If the week's wages are $50, adjusting entry is:

Wages Expense	$50	
Wages Accrued		$50

"Wages Expense" is carried to Profit and Loss. "Wages Accrued" enters balance sheet at May 31 as a liability.

Deferred charges are expenses paid in advance of the period to which they are incident. **Organization expenses** are of this type. Also costs of ore-stripping in mines.

A concern invests $500,000 cash in a mine which it will exploit. $60,000 is spent to strip ores of overlying strata, enough ore bed being uncovered to last 6 years. Each year 1/6 of this $50,000 should be charged off, distribution being on a monthly basis if books are closed monthly. Entry is:

Profit and Loss	$8,333.33	
Deferred Charges		$8,333.33

In a broad sense the theory of deferred charges applies to all assets whose value diminishes as time expires.

DEPRECIATION.—Depreciation is fully discussed in the section on "Depreciation." It is an accruing expense resulting from the wear and tear to which physical assets are subjected. Failure to make due allowance for it results in financial embarrassment and frequently bankruptcy. The correct treatment of depreciation involves the use of **valuation reserves.** Assume case of a building costing $100,000 and possessing an estimated life of 50 years with no-scrap value. Each year the depreciation expense amounts to $2,000 and if books are closed monthly the charge is 1/12 of $2,000, or $166.67. This is journalized thus:

Profit and Loss	$166.67	
Reserve for Depreciation of Building		$166.67

In the balance sheet the reserve for depreciation should be shown as a deduction from the asset account which it evaluates. The charge to Profit and Loss represents the current month's depreciation expense. When it comes time to make the replacement, the reserve serves as a clearing account, the old building account being charged against the reserve, thus:

Reserve for Depreciation of Building	$100,000	
Building		$100,000

BAD AND DOUBTFUL DEBTS.—Accounting procedure to care for uncollectible accounts receivable is similar to that employed to take care of depreciation. Amount of loss from this source depends on nature of business and methods employed in collecting accounts. Its amount during any current period is a matter of estimate, because some of the accounts receivable originating during such period cannot be liquidated until a later period. This estimate is made on basis of past losses and a journal entry is made charging estimated loss to Profit and Loss and crediting a reserve for bad debts, thus:

Profit and Loss	$.......	
Reserve for Bad Debts		$.......

When an individual account receivable is found to be worthless, it should be charged against the reserve, thus:

Reserve for Bad Debts	$.......	
(Name of Party)		$.......

MERCHANDISE.—Modern accounting practice approves keeping the ollowing separate accounts: Merchandise Inventory, Purchases, Freight and 'artage Inward, Returned Purchases, Rebates and Allowances on Purchases, ales, Returned Sales, and Rebates and Allowances on Sales. This plan makes ertain information more available than where simply a single merchandise ccount is kept. To determine gross profit on sales it is necessary to bring this ata together and in conjunction therewith the amount of merchandise remainng unsold. Gross profit is determined by deducting net cost of goods sold from et amount of sales. For illustration of procedure see section on "Inventories."

The following is adapted from R. B. Kester's "Accounting Theory and Practice":[1]

Careful analysis and study of the adjustment of **merchandise records** should e made to see how the logic of the trading section of the profit and loss statenent is worked out in the ledger. Record of the merchandise asset should e kept, in strict theory, same as that of any other asset, viz., the accounts hould be charged with the full cost of the asset and credited at cost with the ortion sold, profit or loss on sale being carried in a separate account. Balance of Merchandise account then shows value of merchandise on hand at any time.

Theory, however, gives way to practical difficulties of handling the account n this way. Therefore, periodically the mixture of asset decreases and income increases brought about through the practical method of handling merchandise records must be corrected, or "unmixed," so that these elements will appear separately. The **Purchases account,** after the opening inventory, inward freight, and purchase returns, rebates, and allowances are transferred to it, gives net total of the merchandise asset for the period. This net total represents two things: (1) merchandise still on hand, and (2) merchandise sold. To adjust records, goods on hand, as shown by physical inventory, are separated from the total and put into the **Merchandise Inventory account,** which shows by its title that it is an asset. That leaves in Purchases account cost of goods sold. The credits which should indicate the decrease in the asset, equal to cost of goods sold, are found in **net merchandise sales** as shown by **Sales account** after transferring to it sales returns, rebates, and allowances. But these credits are here mixed with gross profit. Portion of net sales representing cost of sales of merchandise should now, in strict theory, be transferred from Sales account, to **Purchases account.** This transfer would effect balancing of Purchases account, indicating that there are no merchandise asset values in that account, these having been transferred to **Merchandise Inventory account.** Result of this theoretically correct procedure would be to bring about a segregation of merchandise records into their two elements, the asset element as shown by the Merchandise Inventory account, and the income element as shown by the remaining balance in the Sales account.

PROFIT AND LOSS ACCOUNT.—After all necessary adjustments have been made, the ledger accounts may be said to reflect actual conditions, the real accounts showing the true status of assets and liabilities and the nominal accounts expressing the facts regarding current gains and losses. There remain no mixed accounts. The capital account or accounts stand as at the beginning of the period, while the increases and decreases resulting from the period's transactions still stand in the nominal accounts. To summarize them, a **Profit and Loss account** is opened and their balances are transferred to it. This account must not be confused with the **profit and loss statement** which is made up, not as a ledger account, but as a separate document.

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[1] Vol. I, pp. 121–123.

ADJUSTING AND CLOSING ENTRIES ILLUSTRATED.—Seven types of adjustment entries are needed for the ledger of a mercantile concern:[2]

1. Merchandise Inventory
2. Depreciation
3. Bad Debts
4. Accrued Income
5. Deferred Expenses
6. Accrued Expenses
7. Deferred Income

These are illustrated in the following trial balance taken from the ledger of U. R. Smart as at Dec. 31, 19—:

Trial Balance, December 31, 19—

1	New York National Bank	$ 17,600	
2	Petty Cash	100	
3	Notes Receivable	15,000	
4	Trade Customers	35,000	
5	Reserve for Doubtful Accounts		$ 875
6	Liberty Bonds	3,000	
7	Merchandise Inventory	30,000	
9	Office Furniture and Fixtures	2,800	
10	Depreciation Reserve for Office Furniture and Fixtures		700
11	Store Furniture and Fixtures	12,000	
12	Depreciation Reserve for Store Furniture and Fixtures		3,000
13	Delivery Equipment	4,500	
14	Depreciation Reserve for Delivery Equipment		2,250
15	Buildings	35,000	
16	Depreciation Reserve for Buildings		7,000
17	Land	15,000	
18	Notes Payable		12,000
19	Trade Creditors		25,000
20	Mortgages Payable		17,500
21	U. R. Smart, Capital		90,000
22	U. R. Smart, Personal	10,500	
24	Sales		195,000
25	Sales Returns and Allowances	1,850	
26	Purchases	135,000	
27	Purchases Returns and Allowances		5,400
28	In-Freight and Cartage	1,350	
29	Salesmen's Salaries	13,500	
30	Selling Supplies and Expense	1,600	
31	Advertising	4,800	
32	Out-Freight	400	
33	Delivery Expense	3,300	
34	Office Salaries	5,000	
35	General Expense	2,000	
36	Office Expense	4,500	
37	Printing and Stationery	750	

[2] R. B. Kester, Accounting Theory and Practice, Vol. I, Chs. XXVII, XXVIII.

38	Taxes	2,840	
39	Insurance	1,750	
40	Interest Cost	900	
41	Collection and Exchange	85	
42	Sales Discount	850	
43	Interest Income		1,500
44	Purchase Discount		1,300
45	Sub-Rentals Income		650
46	Special Police on Strike Duty	1,200	
	Total	$362,175	$362,175

Adjustment Data, December 31, 19—

Inventory of Merchandise	$ 26,500
Estimated Depreciation:	
Office Furniture and Fixtures, 10% of original cost.	
Store Furniture and Fixtures, 10% of original cost.	
Delivery Equipment, 16 2/3% of original cost.	
Buildings, 4% of original cost.	
Doubtful Accounts, ¼% of Net Sales.	
Accrued Income:	
Interest Accrued on Notes Receivable	150
Deferred Expenses:	
Insurance Unexpired	250
Advertising Paid in Advance	300
Printing and Stationery Supplies on hand	150
Selling Supplies and Expense	200
Accrued Expenses:	
Taxes	340
Salesmen's Salaries	175
Interest on Notes Payable	50
Special Police on Strike Duty	150
Office Salaries	100
Deferred Income:	
Sub-Rentals Paid in Advance	50

Adjusting entries for above trial balance are as follows:

Purchases	$30,000.00	
Merchandise Inventory		$30,000.00
Merchandise Inventory	$26,500.00	
Purchases		$26,500.00
Depreciation	$ 3,630.00	
Depreciation Reserve for Office Furniture and Fixtures		$ 280.00
Depreciation Reserve for Store Furniture and Fixtures		1,200 00
Depreciation Reserve for Delivery Equipment		750.00
Depreciation Reserve for Buildings		1,400.00
Bad Debts	$ 482.88	
Reserve for Doubtful Accounts		$ 482.88
Interest Income (Accrued)	$ 150.00	
Interest Income		$ 150.00

Insurance (Deferred)		$ 250.00	
Insurance			$ 250.00
Advertising (Deferred)		$ 300.00	
Advertising			$ 300.00
Printing and Stationery (Deferred)		$ 150.00	
Printing and Stationery			$ 150.00
Selling Supplies and Expense (Deferred)		$ 200.00	
Selling Supplies and Expense			$ 200.00
Taxes		$ 340.00	
Taxes (Accrued)			$ 340.00
Salesmen's Salaries		$ 175.00	
Salesmen's Salaries (Accrued)			$ 175.00
Interest Cost		$ 50.00	
Interest Cost (Accrued)			$ 50.00
Special Police on Strike Duty		$ 150.00	
Special Police on Strike Duty (Accrued)			$ 150.00
Office Salaries		$ 100.00	
Office Salaries (Accrued)			$ 100.00
Sub-Rentals Income		$ 50.00	
Sub-Rentals Income (Deferred)			$ 50.00

After these adjustment entries are posted, the ledger reflects the true status of affairs, but the necessary information is scattered over many accounts. The next step is to summarize this information. This is done by means of the **Profit and Loss account,** to which the balances of nominal accounts are transferred, by means of the **closing entries.** These **closing entries** are as follows:

Purchases		$ 1,350.00	
In-Freight and Cartage			$ 1,350.00
Purchase Returns and Allowance		$ 5,400.00	
Purchases			$ 5,400.00
Profit and Loss		$134,450.00	
Purchases			$134,450.00
Sales		$ 1,850.00	
Sales Returns and Allowances			$ 1,850.00
Sales		$193,150.00	
Profit and Loss			$193,150.00
Profit and Loss		$ 25,225.00	
Salesmen's Salaries			$ 13,675.00
Selling Supplies and Expense			1,400.00
Advertising			4,500.00
Out-Freight			400.00
Delivery Expense			3,300.00
Depreciation			1,950.00
Store Furniture and Fixtures	$1,200.00		
Delivery Equipment	750.00		
Profit and Loss		$ 18,560.00	
Office Salaries			$ 5,100.00
Office Expense			4,500.00
General Expense			2,000.00
Printing and Stationery			600.00
Taxes			3,180.00
Insurance			1,500.00

Depreciation			1,680.00
Office Furniture and Fixtures	$ 280.00		
Building	1,400.00		
Profit and Loss		$ 2,367.88	
Interest Cost			$ 950.00
Sales Discount			850.00
Bad Debts			482.88
Collection and Exchange			85.00
Interest Income		$ 1,650.00	
Purchase Discount		1,300.00	
Profit and Loss			$ 2,950.00
Profit and Loss		$ 1,350.00	
Special Police on Strike Duty			$ 1,350.00
Sub-Rentals Income		$ 600.00	
Profit and Loss			$ 600.00
Profit and Loss		$ 14,747.12	
U. R. Smart, Personal			$ 14,747.12
U. R. Smart, Personal		$ 4,247.12	
U. R. Smart, Capital			$ 4,247.12

Note that after net sales and cost of goods sold are transferred to profit and loss, expenses connected directly with sales are closed into Profit and Loss.

The groups of accounts next closed are those covering administrative expenses, financial management expenses, financial management income, non-operating expense, and non-operating income. Order of closing follows order in which same items appear in profit and loss statement (see Form 19). The Profit and Loss account is shown in Form 18. The balance of profit and loss is transferred to Smart's Personal account and the balance of that account is in turn transferred to Smart's Capital account. This completes the process of closing. The final step in the interpretative process consists in setting up a profit and loss statement and a balance sheet.

Profit and Loss

Date	Item	Amount	Date	Item	Amount
19—			19—		
Dec. 31	Purchases	$134,450.00	Dec. 31	Sales	$193,150.00
	Selling Expenses	25,225.00		Financial Management Income	2,950.00
	Administrative Expenses	18,560.00		Sub-Rentals Income	600.00
	Financial Management Expenses	2,367.88			
	Special Police on Strike Duty	1,350.00			
	Net Profit, to U. R. Smart, Personal	14,747.12			
		$196,700.00			$196,700.00

Form 18. Profit and Loss Account in Ledger

PROFIT AND LOSS STATEMENT.—The profit and loss statement is shown in both report and account form (Forms 19. 20). The account form

resembles the Profit and Loss account in form and content, the chief difference being the greater detail introduced in showing sales and cost of goods sold.

U. R. Smart
Statement of Profit and Loss
For the Year Ending December 31, 19—

Sales			$195,000.00	
Sales Returns and Allowances			1,850.00	
Net Sales				$193,150.00
Cost of Goods Sold:				
Inventory of Merchandise, Jan. 1, 19—			$ 30,000.00	
Purchases during the year		$135,000.00		
In-Freight and Cartage		1,350.00	136,350.00	
Less:			$166,350.00	
Purchases Returns and Allowances		$ 5,400.00		
Inventory, Dec. 31, 19—		26,500.00	31,900.00	
Cost of Goods Sold				134,450.00
Gross Profit				$ 58,700.00
Selling Expenses:				
Salesmen's Salaries		$ 13,675.00		
Selling Supplies and Expense		1,400.00		
Advertising		4,500.00		
Out-Freight		400.00		
Delivery Expense		3,300.00		
Depreciation:				
Store Furniture and Fixtures	$1,200.00			
Delivery Equipment	750.00	1,950.00	$ 25,225.00	
General Administrative Expenses:				
Office Salaries		$ 5,100.00		
Office Expense		4,500.00		
General Expense		2,000.00		
Printing and Stationery		600.00		
Taxes		3,180.00		
Insurance		1,500.00		
Depreciation:				
Office Furniture and Fixtures	$ 280.00			
Buildings	1,400.00	1,680.00	18,560.00	
Financial Management Expenses:				
Interest Cost		$ 950.00		
Sales Discount		850.00		
Bad Debts		482.88		
Collection and Exchange		85.00	2,367.88	
Total Operating Expenses			$ 46,152.88	
Financial Management Income:				
Interest Income		$ 1,650.00		
Purchase Discount		1,300.00	2,950.00	43,202.88
Operating Profit				$ 15,497.12
Non-Operating Expense and Income:				
Expense—Special Police on Strike Duty			$ 1,350.00	
Income—Sub-Rental Income			600.00	750.00
Net Profit for the Year				$ 14,747.12

Form 19. Statement of Profit and Loss—Report Form

For the Year Ending December 31, 19—

Inventory, Jan. 1, 19—			$ 30,000.00
Purchases during the year		$135,000.00	
In-Freight and Cartage		1,350.00	136,350.00
			$166,350.00
Less:			
Purchase Returns and Allowances		$ 5,400.00	
Inventory, Dec. 31, 19—		26,500.00	31,900.00
Cost of Goods Sold			$134,450.00
Gross Profit (down)			58,700.00
			$193,150.00
Selling Expenses			
Salesmen's Salaries		$ 13,675.00	
Selling Supplies and Expense		1,400.00	
Advertising		4,500.00	
Out-Freight		400.00	
Delivery Expense		3,300.00	
Depreciation:			
Store Furn. and Fixt	$1,200.00		
Delivery Equipment	750.00	1,950.00	$ 25,225.00
General Administrative Expenses			
Office Salaries		$ 5,100 00	
Office Expense		4,500.00	
General Expense		2,000.00	
Printing and Stationery		600.00	
Taxes		3,180.00	
Insurance		1,500.00	
Depreciation:			
Office Furn. and Fixt	$ 280.00		
Building	1,400 00	1,680.00	18,560.00
Financial Management Expenses			
Interest Cost Notes Payable		$ 950.00	
Sales Discount		850.00	
Bad Debts		482.88	
Collection and Exchange		85.00	2,367.88
Net Operating Profit (down)			15,497.12
			$ 61,650 00
Non-Operating Expense			
Special Police on Strike Duty			$ 1,350.00
Net Profit to U. R. Smart, Personal			14,747.12
			$ 16,097.12

Sales	$195,000.00	
Less—Sales Returns and Allowances	1,850.00	
Net Sales		$193,150.00
		$193,150.00
Gross Profit		$ 58,700.00
Financial Management Income		
Interest Income	$ 1,650.00	
Purchase Discount	1,300.00	2,950.00
		$ 61,650.00
Net Operating Profit		$ 15,497.12
Non-Operating Income		
Sub-Rentals Income		600.00
		$ 16,097.12

Form 20. Statement of Profit and Loss—Account Form

U. R. Smart

Balance Sheet, as at December 31, 19—

Assets				
CURRENT ASSETS:				
Cash—New York National Bank........		$17,600.00		
Petty Cash....................		100.00	$17,700.00	
Notes Receivable..........	$15,000.00			
Trade Customers..........	35,000.00	$50,000.00		
Less—Reserve for Doubtful Accounts..		1,357.88	48,642.12	
Merchandise Inventory............................			26,500.00	
Liberty Bonds....................................			3,000.00	
Accrued Income (interest due but not paid)...........			150.00	$ 95,992.12
DEFERRED CHARGES TO OPERATIONS:				
Insurance Prepaid................................			$ 250.00	
Advertising Prepaid..............................			300.00	
Printing and Stationery Supplies....................			150.00	
Selling Supplies and Expense.......................			200.00	900.0
FIXED ASSETS:				
Office Furniture and Fixtures...........		$ 2,800.00		
Less—Depreciation Reserve..........		980.00	$ 1,820.00	
Store Furniture and Fixtures.............		$12,000.00		
Less—Depreciation Reserve..........		4,200.00	7,800.00	
Delivery Equipment..................		$ 4,500.00		
Less—Depreciation Reserve..........		3,000.00	1,500.00	
Buildings............................		$35,000.00		
Less—Depreciation Reserve..........		8,400.00	26,600.00	
Land..			15,000.00	52,720.0
TOTAL ASSETS....................................				$149,612.1
Liabilities				
CURRENT LIABILITIES:				
Notes Payable........................		$12,000.00		
Trade Creditors........................		25,000.00		
Accrued Expenses:				
Taxes....................	$340.00			
Salesmen's Salaries..........	175.00			
Interest Cost...............	50.00			
Special Police on Strike Duty	150.00			
Office Salaries.............	100.00	815.00	$37,815.00	
DEFERRED INCOME:				
Sub-Rentals Income..................................			50.00	
FIXED LIABILITIES:				
Mortgages Payable..................................			17,500.00	
TOTAL LIABILITIES....................................				55,365.0
Net Worth				
Represented by:				
U. R. Smart, Capital, Jan. 1, 19—.....................			$90,000.00	
Profit for the Year............................		$14,747.12		
Drawings....................................		10,500.00	4,247.12	$ 94,247.1

FORM 21. Balance Sheet—Report Form

U. R. Smart

Balance Sheet, as at December 31, 19—

Assets

CURRENT ASSETS:			
Cash—N. Y. National Bank		$17,600.00	
Petty Cash		100.00	$ 17,700.00
Notes Receivable	$15,000.00		
Trade Customers	35,000.00	$50,000.00	
Less—Reserve for Doubtful Acc'ts.		1,357.88	48,642.12
Merchandise Inventory			26,500.00
Liberty Bonds			3,000.00
Accrued Income			150.00
			$ 95,992.12
DEFERRED CHARGES TO OPERATIONS:			
Insurance Prepaid		$ 250.00	
Advertising Prepaid		300.00	
Printing and Stationery Supplies		150.00	
Selling Supplies and Expense		200.00	900.00
FIXED ASSETS:			
Office Furniture and Fixtures	$ 2,800.00		
Less—Deprec. Reserve	980.00	$ 1,820.00	
Store Furniture and Fixtures	$12,000.00		
Less—Deprec. Reserve	4,200.00	7,800.00	
Delivery Equipment	$ 4,500.00		
Less—Deprec. Reserve	3,000.00	1,500.00	
Buildings	$35,000.00		
Less—Deprec. Reserve	8,400.00	26,600.00	
Land		15,000.00	52,720.00
TOTAL ASSETS			$149,612.12

Liabilities

CURRENT LIABILITIES:			
Notes Payable		$12,000.00	
Trade Creditors		25,000.00	
Accrued Expenses:			
Taxes	$ 340.00		
Salesmen's Salaries	175.00		
Interest Cost	50.00		
Special Police on Strike Duty	150.00		
Office Salaries	100.00	815.00	$ 37,815.00
DEFERRED INCOME:			
Sub-Rentals Income (Paid in Advance)			50.00
FIXED LIABILITIES:			
Mortgages Payable			17,500.00
TOTAL LIABILITIES			$ 55,365.00

Net Worth

U. R. Smart, Capital		$90,000.00	
Profit for the Year	$14,747.12		
Drawings	10,500.00		
Net Increase		4,247.12	94,247.12
TOTAL LIABILITIES AND NET WORTH			$149,612.12

FORM 22. Balance Sheet—Account Form

BALANCE SHEET.—Balance sheet may be arranged in accordance with either of two forms. The first form shown (Form 21) is called the **report form.** It is non-technical and easily understood by business men not skilled in accounts. The second balance sheet (Form 22) is given in **account form,** subtraction of liabilities from assets being indicated by their respective debit and credit positions in the account.

Controlling Accounts

PURPOSE OF CONTROLLING ACCOUNTS.—Accounting records must be adaptable to conditions as well as be correct in principle. As markets widen customers and creditors grow more numerous, so that the simple arrangement of general and cash journals and of general ledger becomes inadequate. The cash journal remains an adequate record so far as cash is concerned, but by the use of columns the handling of certain classes of receipts and disbursements may be improved. The ledger becomes encumbered with the increasing number of accounts receivable and payable, making it difficult to avoid errors or to locate them after they are made. Subdivision of work among clerks becomes difficult.

The principle of columnar journals and controlling accounts supplies a remedy for such a situation. **Controlling accounts** are accounts kept in the general ledger to which are posted, from the journals, totals of debits and credits. The details of debits and credits are posted to subordinate ledgers which the controlling accounts govern. Frequently the subordinate ledger is given the same name as its controlling account. Thus the **accounts receivable ledger** contains the accounts receivable and is controlled by the **Accounts Receivable controlling account** in the general ledger. Also the **accounts payable ledger** contains the accounts payable and is controlled by the **Accounts Payable controlling account** in the general ledger.

Use of controlling accounts necessitates specialization in the forms of journals. In so far as possible those entries which affect accounts in subordinate ledgers should be removed from the general journal, or special columns should be provided in the general journal for their reception. Special columns for the reception of these entries should also be provided in the cash book. By providing (a) special journals, or (b) special columns in general and cash journals or both, to receive items to be posted in detail to subordinate ledgers, it is possible to post totals to controlling accounts, thus fulfilling the requirements of carrying to controlling accounts totals of debits and credits posted in detail to subordinate ledgers.

DEBITS TO CONTROLLING ACCOUNTS RECEIVABLE.—Figures to be entered in controlling account must be debit and credit summaries and must be secured with least possible effort. Most debits to customer's accounts are from the sales journal, but some may come from the credit side of cash journal, as when cash payments are made as a rebate or refund. Others come from the general journal for various adjustments. This class of debits is not numerous, however. As usually operated the sales journal carries a column for credit sales whose total represents the total of all detailed debits to customers' accounts. Total of credit sales column determines total debits to all customers on account of charge sales In showing this total it should be indicated that it is to be posted both to credit side of sales account and to debit side of controlling accounts receivable account in the general ledger. This latter is so because the controlling account takes the place of the accounts receivable ledger in the general ledger.

If total sales per sales journal includes both cash and credit sales, the following is a summary entry thereof:

Accounts Receivable	\$.......	
Cash	....	
Sales		\$.......

The Cash debit is not posted, being set up simply to show the equality of the summary. It is posted from the cash book. The debit to Accounts Receivable when posted to the general ledger account of that title secures a charge to that account equal to all individual debit postings to the accounts receivable ledger. Debits to this controlling account are also posted from general journal and cash book. An accounts receivable analysis column may appear on debit side of general journal in which charges to customers are made. At end of month the total of this column gives in one figure item to be posted to the general ledger accounts receivable account. This is equal to the individual debits posted from general journal to customers' accounts in the accounts receivable ledger.

Ordinarily, on account of fewness of items involved, it is not necessary to provide an accounts receivable column on the credit side of the cash book. Each item posted to debit of an account receivable in the accounts receivable ledger must be posted separately to general ledger accounts receivable controlling account.

CREDITS TO CONTROLLING ACCOUNTS RECEIVABLE.—Four main sources of credits to accounts receivable accounts are:

1. Payments by customers entered in cash book.
2. Goods returned by customers entered in returned sales journal.
3. Notes received in payment entered in notes receivable journal.
4. Adjustments of various kinds entered in general journal, also notes and returned sales entered in general journal where special journals for those transactions are not kept.

Special credit columns may be provided in cash journal and general journal the totals of which are posted to credit of the Accounts Receivable controlling account, the details to the individual accounts receivable in the subordinate accounts receivable ledger. The posting from the returned sales journal at the month end is summarized thus:

Sales Returns	\$.......	
Accounts Receivable		\$.......

This total credit posting equals in amount the individual postings to the credit of the accounts receivable accounts posted from the returned sales journal. If a notes receivable journal is kept a similar entry is required for it, thus:

Notes Receivable	\$.......	
Accounts Receivable		\$......

Thus all debits and credits which are carried in detail to subordinate ledgers are represented in summary form in the general ledger controlling account. It is possible to secure a trial balance of the general ledger without considering the detailed accounts found in the subordinate ledger. Nevertheless part of the work of checking up at end of period consists in making a list of customers' balances and seeing that their total agrees with the controlling account balance.

CONTROLLING ACCOUNTS PAYABLE ACCOUNT.—The principles governing the controlling Accounts Payable account are the same as those

governing the controlling accounts receivable accounts, but the details differ. Summary entry for purchases journal is:

Purchases	$.......	
Accounts Payable		$.......
Cash		....

The cash item should not be posted.

Debits to accounts payable controlling account come from accounts payable columns in cash book, credit side, general journal, and summaries for notes payable and returned purchases journals.

SELF-BALANCING SUBORDINATE LEDGERS.—The subordinate ledger may be made self-balancing by setting up an exact duplicate of the controlling account in the subordinate ledger but with the **sides reversed.**

INTRODUCING CONTROLLING ACCOUNTS.—If desired to introduce controlling accounts where not formerly used, adjustments are necessary. Accounts to be controlled should be segregated and controlling account columns provided for in books of original entry. With transfer of these accounts to a separate ledger and introduction of controlling accounts in general ledger, latter's balance is preserved. Opening entry in the newly established controlling account is sum of balances of transferred accounts. The new controlling account may be established by journal entry as shown in Form 23. Posting this entry opens the accounts receivable controlling account in the general ledger and closes the individual customers' accounts in the general ledger. The individual customers' accounts are in turn opened in the accounts receivable ledger.

TREATMENT OF WITHDRAWALS OF STOCK-IN-TRADE.—Sales journal is designed to contain only sales of stock-in-trade. Sometimes goods are withdrawn at cost for use in the business or for proprietor's personal use. Although it is not strictly correct to enter these at cost price in sales journal, it is sometimes done as a matter of convenience. Results for statistical purposes are not thereby vitiated materially if such withdrawals are small, or if they continue fairly constant from period to period. When so recorded a problem arises in summarizing the sales journal if controlling accounts are used. The accounts receivable ledger is limited to customer's accounts only. Proprietors' accounts and other accounts to which withdrawals might be charged are kept in the general ledger. Whereas most items entered in sales journal are posted to the accounts receivable ledger, such withdrawals at cost must be posted in detail to the general ledger. This total of sales journal does not represent correct debit to Accounts Receivable controlling account. It is necessary to make an analysis of the sales journal contents to secure this figure. To do this, if possible three columns in addition to departmental columns should be used. Column titles would be: "Sales ledger," "Cash," and "Sundry." Sum of these three gives total to check against total of other distributive columns, but only "sales ledger" total is posted to accounts receivable controlling accounts, and individual items in that column are posted to customers' accounts in accounts receivable ledger. Items in the 'sundry" c lumn are posted to proper accounts in the general ledger. If number of such withdrawal items is small, they may be recorded in the regular column in the sales journal and be given some distinguishing mark. At month's end these must be totaled separately and their sum subtracted from total of sales column to secure correct amount to post to the controlling account. Another plan is to make a correcting journal entry when entry for total of the sales journal is made. The special items being included in the total of the sales column, an

General Journal

Accounts Payable	Accounts Receivable	General	Date		L. F.	General	Accounts Receivable	Accounts Payable
		15,000 00		Accounts Receivable				
				A (customer)		2,500 00		
				B "		5,000 00		
				C "		4,000 00		
				D "		3,500 00		

Form 23. General Journal—Opening Entry for Controlling Account

Sales Journal

		Sales Ledger	Cash	Sundry	A	B	C
		(Detailed entries appear in this space)					
Totals		25,000 00	75,000 00	750 00	30,500 00	25,250 00	45,000 00
Accounts Receivable		25,000 00					
Cash		75,000 00					
Sundry		750 00					
Dept. A, Sales			30,500 00				
" B, "			25,250 00				
" C, "			45,000 00				

FORM 24. Sales Journal Summary

General Journal

Accounts Receivable	Accounts Payable	General	Date		L. F.	General	Accounts Receivable	Accounts Payable
				(Detailed entries appear in this space)				
		10,250 00				8,050 00		
1,500 00	5,000 00	1,500 00	Dec. 31	Accounts Receivable			1,200 00	7,500 00
		5,000 00		Accounts Payable				
				Accounts Receivable		1,200 00		
				Accounts Payable		7,500 00		
		16,750 00		To close		16,750 00		

FORM 25. General Journal Summary of Controlling Accounts

Cash Book

Date			L.F.	General	Accounts Receivable	Sales Discount	Bank
Dec.	31	Totals		13,050 00	41,250 00	1,800 00	52,500 00
		Balance Dec. 1		5,000 00			5,000 00
				8,050 00			
		Bank, Dr.					47,500 00
		Sales Discount, Dr.					1,800 00
		Accounts Receivable, Cr.		41,250 00			
				49,300 00			49,300 00
Jan.	1	Balance		11,350 00			11,350 00

Form 26a. Cash Book Summary—Receipts Side

Cash Book

Date			L. F.	General	Accounts Payable	Purchase Discount	Bank
Dec.	31	Totals		8,000 00	37,500 00	4,350 00	
		Bank, Cr.					41,150 00
		Purchase Discount, Cr.					4,350 00
		Accounts Payable, Dr.		37,500 00			
				45,500 00			45,500 00
		Bank, as above					41,150 00
		Balance					11,350 00
							52,500 00

Form 26b. Cash Book Summary—Disbursements Side

overcharge occurs to the Accounts Receivable controlling account. A correcting journal entry is made crediting the controlling Accounts Receivable account and charging the proprietor's Personal account, thus:

Proprietor, Personal	$.......	
Accounts Receivable		$.......

The debit to the proprietor should be checked here and posted from sales journal, or vice versa.

TREATMENT OF CASH SALES.—A separate column for cash sales in the sales journal may be dispensed with. Under one plan cash sales are included

in the charge to accounts receivable controlling account although the individual items are not posted to the subsidiary ledger. They are also included in the total to be credited to the accounts receivable controlling account as per the debit side of the cash book. Inflated debit in controlling account is offset by an equally inflated credit item.

EXTRANEOUS ITEMS IN PURCHASES JOURNAL.—When items not intended for stock are purchased and entered in purchases journal, such items should not be charged to purchases but to the personal account of proprietor, or whatever account is affected.

SUMMARY ENTRIES FOR COLUMNAR BOOKS.—The summary entries for special journals may be made in the general journal, but are preferably made directly in the special journals. A **sales journal summary** is shown in Form 24. A **general journal summary** is shown in Form 25. A **cash book summary** is shown in Forms 26a, 26b.

Partnership Accounting

PARTNERSHIP DEFINED.—The New York law say that "a partnership, as between the members thereof, is the association, not incorporated, of two or more persons who have agreed to combine their labor, property and skill, or some of them, for the purpose of engaging in any lawful trade or business, and sharing the profits and losses as such between them."

The English Partnership Act of 1890 defines a partnership as "the relation which subsists between persons carrying on a business with a view of profit."

PARTNERSHIPS CLASSIFIED.—In general, partnerships are either common law or limited, but other special subdivisions may occur. Thus under the Income Tax Law of 1918 personal service corporations were regarded as partnerships and were taxed accordingly. **Common law partnerships** are meant when reference is made to partnerships without limitation or qualification. These are governed not by statute but by the common law. Of course the common law may be modified by statute. According to the principles governing common law partnerships, the members are subject to unlimited liability. **Limited partnerships** are those in which restrictions are placed on the liability of some of the partners, providing certain requirements of the law are met. Partners limited in liability to their investments are **special partners.** Those who retain unlimited liability are **general partners.** In order to become a limited partnership the usual requirement is that a certificate be deposited in a public office, stating:

1. Name of firm.
2. Name and residence of each partner, and whether general or special.
3. Nature of business.
4. Amount of each partner's investment,
5. Amount of capital.
6. Duration of partnership.

The New York law governing formation of limited partnerships reads:

Two or more persons may form a limited partnership which shall consist of one or more persons of full age, called **general** partners, and also of one or more persons of full age who contribute in actual cash payments, a special sum as capital, to the common stock—or fund—called **special** partners, for the transaction within this state

of any lawful business, except banking and insurance by making, severally signing and acknowledging and causing to be filed and recorded in the clerk's office in the county where the principal place of business of such partnership is located, a certificate in which is stated:

1. The name or firm under which such partnership is to be conducted and the county wherein the principal place of business is to be located.
2. The general nature of the business intended to be transacted.
3. The names, and whether of full age, of all general and special partners therein, distinguishing which are general and which are special partners, and their places of residence.
4. The amount of capital which each special partner has contributed to the common stock—or fund.
5. The time at which the partnership is to begin and end.

JOINT-STOCK COMPANY.—This is a partnership or association in which a participation in ownership and control and in a right to a proportion of profits is evidenced by transferable shares of stock. A board of directors chosen by the stockholders exercises management and control. In above respects the joint-stock company resembles the corporation, but insufficiency of assets to pay debts in case of bankruptcy is made good out of private fortunes of partners as is done in case of general partnerships.

CLASSIFICATION OF PARTNERS.—An **ostensible partner** is one who holds himself out as and is known to be a partner. A **nominal partner** is one known as a partner but who possesses no real interest in the firm. A **dormant** or **silent partner** is one who does not take an active part in the firm's affairs and who is not known as a partner to outsiders. A **secret partner** is one who possesses an interest in a firm and takes an active part in its affairs but who is not known as a partner to outsiders.

ARTICLES OF AGREEMENT.—Prospective partners usually form an agreement regarding management of the future enterprise. Points to be covered in this agreement are:

1. Capital to be invested by individual partners. Amounts and proportions of contributions should be stated. Admission of new partners should be covered. Good-will adjustments should be set forth.
2. Provision for division of profits or losses among partners.
3. Provision regarding allowance of interest on capital invested by partners.
4. Provision regarding treatment of withdrawals.
5. Provision for admission of new partners. In this it may be desirable to indicate method to be pursued in adjusting book values to real values, and treatment of good-will.
6. Provision for keeping of records. Preferably by double entry, and periodical audits by certified public accountants may be desirable.
7. Provision for dissolution. After creditors are satisfied any excess of assets over capital is divided equally among partners, unless there is provision to the contrary.

Other topics may require treatment. One requiring extended consideration is the question of interest on drawings. If desirable, a limit to drawings may be prescribed, interest being charged on excesses drawn over the prescribed amount and credited on any excess of amount prescribed over amount withdrawn.

Provision may be made to avoid dissolution in case of death of a partner. A partner's death is likely to occur at a time when it would be inconvenient to

close the books. If profits do not fluctuate greatly, provision may be made that the outgoing partner or the estate of the deceased partner be compensated on basis of past year's profits. If desirable to avoid disbursement of too great an amount at one time, such payment may be arranged on the instalment plan.

DISSOLUTION OF PARTNERSHIPS.—Partnerships are dissolved,

1. By arrival of a time predetermined by agreement.
2. By illegality of purpose.
3. By impossibility of accomplishing purpose for which formed.
4. By unanimous consent of partners.
5. By assignment of interest of a partner without consent of all other partners.
6. By death of a partner.
7. By anything incapacitating a partner, as insanity or drunkenness.

Distribution of Assets at Dissolution.—Obligations are liquidated in the following order:

1. Creditors.
2. Loans from partners.
3. Capital of partners.
4. Residue is distributed among partners in ratio in which profits and losses are shared.

OPENING ENTRIES.—The opening entry should express clearly the contribution of each partner. Assume that two individuals about to form a partnership possess following assets and liabilities:

E. Johnson:	
Assets:	
Cash	$ 2,000
Merchandise	6,000
Real Estate	15,000
Accounts Receivable	4,000
Furniture and Fixtures	800
Notes Receivable	900
	$28,700
Liabilities	
Mortgage	$ 8,000
Accounts Payable	1,200
	$ 9,200
S. Arthur:	
Assets:	
Cash	$12,000
Liabilities:	
None.	

It may be agreed that Arthur's investment entitles him to one-half of profits and interest in the entire investment proportionate to his contribution; or he may be given a half-interest in the whole investment, in which case capital accounts of partners require adjusting to make them equal. If each partner's interest in the investment is to be proportionate to his contribution, opening entry is:

E. Johnson and S. Arthur agree to form a partnership this day under the firm name of Johnson and Arthur. Assets, liabilities, and capital are as follows:

Cash	$14,000	
Merchandise	6,000	
Real Estate	15,000	
Accounts Receivable	4,000	
Furniture and Fixtures	800	
Notes Receivable	900	
Mortgage		$ 8,000
Accounts Payable		1,200
E. Johnson, Capital		19,500
S. Arthur, Capital		12,000

If thought preferable, the assets each partner contributes may be set out separately, instead of being shown in a compound entry as above.

If it is desired to give each partner a half-interest in the business, the capital accounts require adjusting. Either (a) Johnson's account should be charged and Arthur's account should be accredited with half the difference between the accounts as they stand above, or (b) good-will should be brought in as part of Arthur's investment.

For (a) the adjustment is:

E. Johnson, Capital	$3,750	
S. Arthur, Capital		$3,750
To equalize capital accounts of partners.		

For (b) the adjusting entry is:

Good-Will	$7,500	
S. Arthur, Capital		$7,500

There can be no objection to bringing good-will into books if it represents a real condition. If there is no good-will then method (a) should be followed.

DISTRIBUTION OF PROFITS.—The fundamental principles governing profit distribution are:

1. In absence of agreement to contrary, profits are divided equally among partners.
2. If profits are to be divided in ratio of capital interests, it should be specified in agreement whether original investments or capital accounts as at beginning of period should determine ratio of subdivision.
3. Agreement should contain provision for a change in profit-sharing ratio in case one partner should withdraw a part of his investent.
4. Unless special provision is made for sharing of losses the profit-sharing ratio controls.
5. Salaries are not allowed to partners unless provided for in the articles or later agreement.
6. Provision should be made for handling of profits not drawn by partners. They may be carried either as open balances in the partners' Drawing accounts or they may be transferred to the Capital accounts.

Average Investment Basis for Profit-Sharing.—Sometimes special partnerships are formed to undertake a special contract or to do some special kind of work. Total capital required may not be known at beginning, or it may be a policy to let whatever partner happens to have funds in readiness advance

them for a longer or shorter period. Under these circumstances the average investment of the partners may be made the basis of profit-sharing.

Determining Average Investment.—Assume that two partners, A and B, invest \$6,000 and \$12,000, respectively, on Jan. 1, and make the following withdrawals and additional investments:

Withdrawals:	
A—Mar. 31	\$ 500
May 31	700
B—June 30	200
July 31	2,000
Oct. 30	300
Additional Investments:	
A—July 31	\$ 2,000
B—Aug. 30	6,000

At end of year A has invested:	
\$6,000 for 12 mos., or	\$ 72,000 for 1 mo.
2,000 " 5 " "	10,000 " " "
	\$ 82,000 " " "
He has withdrawn:	
\$500 for 9 mos., or	\$ 4,500 for 1 mo.
700 " 7 " "	4,900 " " "
	\$ 9,400 " " "

His investment is \$82,000 – \$9,400, or \$72,600 for 1 month, or an average investment of \$72,600 ÷ 12 = \$6,050. At end of year B has invested:

\$12,000 for 12 mos., or	\$144,000 for 1 mo.
6,000 " 4 " "	24,000 " " "
	\$168,000 " " "
He has withdrawn:	
\$ 200 for 6 mos., or	\$ 1,200 for 1 mo.
2,000 " 5 " "	10,000 " " "
300 " 2 " "	600 " " "
	\$ 11,800 " " "

His investment is \$168,000– \$11,800, or \$156,200 for 1 month, or an average investment of \$156,200 ÷ 12 = \$13,016.67.

Interest on Investments.—In partnership accounting interest question arises in connection with: (a) adjustment of profits, and (b) withdrawals. When interest is employed to adjust profits, the purpose is to give one partner more and another less than the rule of equal division of profits would permit. If A, B, and C invest, respectively, \$500,000, \$750,000 and \$1,000,000, average investment of all is \$750,000. If each is credited 6% on capital, the charge therefor being carried to profit and loss, the partners' capital accounts are credited for interest with following amounts:

A	\$ 30,000
B	45,000
C	60,000
Total	\$135,000

Since the \$135,000 is charged to profit and loss, each partner bears 1/3 of it, or \$45,000. B does not gain or lose, but A gets \$15,000 less and C \$15,000 more than if interest were not brought in. A simple way of accomplishing the same result, so far as Capital accounts are affected, is by means of the following adjusting entry:

A, Capital	\$15,000	
C, Capital		\$15,000

Sometimes when partners contribute more or less than the agreed amount, those contributing more are allowed interest on the excess and those who contribute less are charged interest on the deficit. Usually these adjustments are handled through Profit and Loss, the final balance of Profit and Loss being distributed in profit and loss sharing ratio. Some accountants advocate that this interest adjustment be made direct through appropriation section of profit and loss; others that it be carried to regular interest accounts.

A, B, and C, equal partners, each agree to contribute \$10,000. 6% is to be credited on excess contributions and charged on deficits. A contributes \$15,000, B, \$9,000, and C, \$7,000.

A's excess is \$5,000; interest thereon is \$300.
B's deficit is \$1,000; interest thereon is \$ 60.
C's deficit is \$3,000; interest thereon is \$180.

Entries to bring these interest items into books are as follows

Profit and Loss	\$300	
A		\$300
B	\$ 60	
C	180	
Profit and Loss		\$240

As a result the balance in Profit and Loss is a debit of \$60 which is distributed among partners as per following entry:

A	\$20	
B	20	
C	20	
Profit and Loss		\$60

CHANGES IN PARTNERS' CAPITAL ACCOUNTS.—Since amount of profit left in Capital accounts of partners differs, the ratio of the accounts may be different at the end of a period than at the beginning. If profits are to be shared on basis of investments, profit-sharing ratio changes with changes in investments. The agreement should cover this point specifically. In event of dissolution, accretions through profits constitute claims ranking ahead of partners' capitals. They are in the nature of loans from partners and may be carried in special **partners' Loan accounts.** Sometimes such accretions are carried in the **partners' Personal accounts.**

CAPITAL CONTRIBUTIONS vs. LOANS FROM PARTNERS.—Money advanced by partners may be either an additional contribution of capital or a loan to the partnership. It is important that there be a specific understanding on this point and it may be desirable to include a provision thereon in the articles of agreement. If advances are to be regarded as capital contributions they should be reflected in the capital account of the partner making the advance. This will require a recomputation of the profit-sharing ratio if this is based on invested capital. If they are loans they are reflected in partners' Loan accounts. If evidenced by notes payable of the firm, these notes should

not be carried in the regular Notes Payable account representing liability to outsiders. At common law a partner cannot bring suit against his firm.

CLOSING ENTRIES.—Balance of Profit and Loss must be transferred to Capital accounts according to an accepted ratio or, in absence of agreement, by equal subdivision. Balances of Withdrawal accounts are not carried to Profit and Loss, but direct to Capital accounts, if closed out. Usual plan is to bring net profits into personal accounts and then carry balance of personal accounts to capital accounts.

A, B, and C are partners and share profits equally. Balance of Profit and Loss for a period is $30,000. Their Personal accounts stand charged with $200, $400, and $700, respectively, for withdrawals. Entries to carry net profit to withdrawals and thence to capital are:

Profit and Loss	$30,000	
A, Personal		$10,000
B, Personal		10,000
C, Personal		10,000
To carry profits to partners' Personal accounts.		
A, Personal	$ 9,800	
A, Capital		$ 9,800
B, Personal	$ 9,600	
B, Capital		$ 9,600
C, Personal	$ 9,300	
C, Capital		$ 9,300
To carry balance of Personal accounts to Capital accounts as additional investments of partners.		

ACCOUNTING FOR PARTNERSHIP DISSOLUTION.—Theoretically, capital invested is returned to partners at dissolution in ratio in which it was invested. An increment in investment over contributions is due to accumulation of profits; its distribution is governed by rule governing distribution of profits. A deficit is governed by rule governing distribution of losses. First step is to divide accumulated profit or deficit among partners as per rule. Remaining investment is distributed among partners in proportion to Capital accounts. If a deficit exists, ratio of partners' capital is changed, unless profit and loss distribution ratio is same as ratio of investments.

Assume that balance sheet of C and D is:

Assets	$100,000	C, Capital	$100,000
Deficit	40,000	D, Capital	40,000
	$140,000		$140,000

If there is equal distribution of profits and losses, balance sheet becomes:

Assets	$100,000	C, Capital	$ 80,000
		D, Capital	20,000
	$100,000		$100,000

Asset distribution is now made in ratio of 4 to 1, whereas ratio of original investment was 5 to 2.

Distribution of deficit may change Capital account of one or more partners to a deficit. Assume balance sheet of E, F, G, and H is as follows:

Assets	$ 400,000	E, Capital	$ 500,000
Deficit	600,000	F, Capital	100,000
		G, Capital	200,000
		H, Capital	200,000
	$1,000,000		$1,000,000

Distribution of the deficit leaves it thus:

Assets	$ 400,000	E, Capital	$ 350,000
F, Capital	50,000	G, Capital	50,000
		H, Capital	50,000
	$ 450,000		$ 450,000

E, G, and H receive amounts indicated by their capital accounts if F makes good his deficit. If he does not, the loss must be distributed equally among the three solvent partners.

ADMISSION OF NEW PARTNERS.—When a new partner is to be admitted, the question of valuation of assets arises. If the book value of these is not satisfactory, steps must be taken to determine a satisfactory valuation. When the existing book value is accepted, it is necessary merely to make an entry charging the proper account for his contribution and crediting his Capital account. Thus if his contribution consists of $25,000 in cash the entry is:

Cash	$25,000	
A, Capital		$25,000

Another case is where a new valuation of the old assets of the existing partnership is necessary to permit the admission of an additional partner on an equitable basis. After proper revision of book values are made, the new partner is admitted as in preceding illustrations.

A third case arises where there is a good-will value additional to values indicated on books. Good-will value being determined, an entry is necessary to bring it upon books as an asset, Capital accounts of partners being credited. An entry is next in order to bring in the new partner's investment.

Consignments

DEFINITION.—A **consignment** is a shipment of goods to another party to be sold by latter for the account of the shipper. The owner or shipper is the **consignor.** The party receiving the goods is the **consignee.** A **consignment-out** is a shipment of goods on consignment to another. A **consignment-in** is a receipt of goods on consignment from another. Consignments are governed by the law of bailments and agency. The consignor is principal and the consignee is agent. A **broker** is not usually a consignee, but acts as middleman, bringing buyer and seller together. His charge for his service is a commission usually known as brokerage. A commission merchant is sometimes known as a **factor.** A broker sells goods for account of his principal, but the principal delivers the goods direct to the purchaser and collects the account. A factor has his principal's goods in his own possession and may sell either in his own name or that of his principal. The factor may or may not operate under a formal contract. If he operates under a formal contract it may be either

specific or general, i.e., it may cover a single consignment or it may cover all consignments between the two parties.

RIGHTS AND DUTIES OF FACTOR.—The factor is expected to exercise the same care with the goods of his principal as with his own. He may extend credit to the purchaser according to custom, but must use care in determining his credit rating. He must use ordinary diligence in making collections. He can transfer title to the goods and if principal is unknown to purchaser he may give a better title than was possessed by principal. While goods are in possession of factor he must give them adequate protection, but he is not liable in case they are damaged by forces over which he has no control. The character of the goods determines the degree of diligence factor must exercise. Factor must keep goods and funds of principal separate from his own goods and funds. It is usually sufficient, however, if funds are carefully separated in factor's accounts so that actual physical separation can be accomplished at any time if necessary. Factor may incur necessary expenses, as insurance, duty, freight, etc., properly to handle principal's goods and effect their sale. These are charges against the principal. The factor holds a lien on principal's goods for legitimate expenses incurred as well as for any money advanced to principal in advance of regular settlement. He also possesses a lien for commission and may apply proceeds of sale towards its payment. Factor must sell at the price fixed by his principal if acting under specific instructions; otherwise at highest price obtainable, exerting due diligence to that end. If a minimum sale price is fixed by consignor a sale below that price makes the factor liable for the difference. Factor is not liable to principal for money value of sales until amount due therefor is collected; but this rule does not hold if factor has not used due diligence in granting credit or in making collections. Under *del credere* agreements, factors, in consideration of a higher commission, hold themselves responsible for proceeds of sales. Consignee must not pledge as his own, goods received by him on consignment; but if he has made advances to his principal, to secure his debt he may deposit goods equivalent to his advances, provided third party is given notice. In absence of contrary instructions factor may accept buyer's promissory note in payment for consigned goods. He is not held liable for its dishonor if he has at time of acceptance thereof determined credit standing of maker and has not discounted it for his own use. Disposition of proceeds of a sale must accord with wishes of the principal. Factor is not chargeable with interest unless so provided in agreement or unless such a provision can be implied either from the contract or from custom. Concerning factor's duty to account, Francis B. Tiffany, in "Handbook of the Law of Principal and Agent," says:

> It is the duty of the agent to account to the principal for all the money and property coming into his hands by virtue of his employment, including all profits resulting from the transactions, either as agent, or on his own account in breach of his duty as agent.
>
> His specific duties in this respect are:
>
> 1. To keep accounts of all his transactions in the course of the agency, and to render his accounts whenever required by the terms of his employment, or upon demand.
> 2. To keep money and property of the principal separate from his own, and from those of third persons.
> 3. To pay or deliver to the principal all money and property of the principal coming into his hands as agent, whether required by the terms of the employment, or upon demand.

The factor may keep accounts affecting consignments either in his general books or he may keep a special set of agency books. If he keeps consignment accounts in general books, they must be so kept as to be readily distinguishable

from his other interests. If he keeps special books, he will from time to time transfer results of his commission business to his general books in order to show the effect on his assets, liabilities, and income.

ACCOUNT SALES.—Upon completion of his work for his consignor the factor renders to him an **account sales,** which is a summarized statement of transactions. It shows what goods were received by factor, what he has sold, expenses incurred in connection therewith, and amount due principal. This may be credited to the principal's account on the factor's books, or it may be remitted to him. The factor's accounting takes no account of price at which principal bills goods to him, which may be at cost, current market, or a fictitious price. The price at which the factor sells is the amount against which he charges his expenses. An account sales is shown in Form 27.

Account Sales

of fruit received via P & Q Steamboat Line,
from A. T. Gordon, Portland, Ore.,
to be sold for his account
and risk.

Rendered by Atkins & Lord, 21 Spruce St. New York, April 10, 19—

19—								
Mar.	2	Received						
		300 bbl. apples	@	$10.00	$3,000	00		
		30 " pears	@	8.00	240	00	$3,240	00
		Sales						
Mar.	5	50 bbl. apples	@	$12.00	$ 600	00		
		20 " pears	@	9.50	190	00		
	8	200 " apples	@	13.00	2,600	00		
	10	10 " pears	@	9.00	90	00		
	13	50 " apples	@	13.50	675	00	$4,155	00
		Charges						
		Freight & Drayage		$ 75.00				
		Commission 5%		207.75			282	75
		Net proceeds by check					$3,872	25
		E. & O. E.						

Form 27. Account Sales

ENTRIES ON BOOKS OF CONSIGNOR.—The consignor desires to learn the outcome on each consignment and to do so must keep a separate record for it. This account may be kept either in a subsidiary consignments ledger or in the general ledger, the number of accounts determining which policy should be pursued in this respect. Sending a consignment of goods is not a sale, and entry is not made therefor in the Sales account. **One method** is to transfer

the goods from the Purchases account to a Consignment account. The word "Consignment" should be followed by the consignee's name and be given a number, as, "Consignment No. 27, L. T. Morton." The transfer from Purchases to Consignment account is made at cost price and this Consignment account is also charged with all expenses applicable to the consignment—insurance, freight, taxes, etc. When account sales is received Consignment account is credited with gross sales and charged with expenses, or credited with net proceeds, final result being same in either case. If factor remits money with account sales, cash is debited, but if he does not, his account is charged for amount of net proceeds. As it stands thus, Consignment account shows a purely nominal balance—profit or loss. When a Consignment account has been completed its balance should be transferred to a Consignments Profit and Loss account, the balance of which is transferred to general Profit and Loss at end of accounting period.

Another plan is to set up memorandum accounts at time consignment is sent, charging a Consignment account and crediting a Consignment Sales account for invoice value of goods. No entry is made in Purchases account, and any expenses incurred are charged to regular expense accounts, not to the Consignment account as in above case. For original entry a special consignments journal is required only if consignments are numerous. When account sales is received, regular sales account is credited with net or gross proceeds. If with gross proceeds, cash or consignee and expenses are at the time charged. If with net proceeds, cash or consignee is charged. Memorandum accounts are then canceled by a reversal entry. Under this method consignment and regular sales are merged and it is impossible to ascertain results secured from each.

At end of consignor's fiscal period, if any consignments are outstanding, under first method explained above goods shown in Consignment account are included in the **inventory**; under second method unsold consigned goods are so included.

ENTRIES ON BOOKS OF CONSIGNEE.—One plan is to open memorandum accounts, "Consignments" and "Consignments-In," the former being charged for invoice price of goods when received and latter being credited. A third account is operated with the principal, as, for example, "James Lott, Principal," and is charged with expenses and commission and credited with sales. Its balance, when all goods are sold and all expenses and commissions charged, is amount due principal. It is closed by a debit when amount is transmitted to principal. So long as this account with principal stands open on books of consignee, it represents a trustee's liability, not an ordinary account payable.

Another plan is to record receipt of goods in a memorandum book or consignments received book, along with information as to price, amount, etc. In general books a Consignment account in principal's name is opened and charged with expenses and credited with sales. After all sales are completed, balance of this account represents amount due principal.

It is always important that all transactions relating to a given consignment be so designated that this relationship is always evident. If consigned goods are sold on account, it is important to be able to distinguish to what consignment any uncollectible account belongs.

PROFIT ON FACTOR'S BOOKS.—In case of transactions which are completed, the profit earned thereon is reflected by credits in a Commissions Earned account, the corresponding debits having been made to accounts of proper principals. In case all goods in a given consignment are not sold at end of an

accounting period, it is necessary to make an adjusting entry charging account of principal for amount of commission earned to date and crediting commissions earned account. Unsold goods of principal must be excluded from **inventory of factor.**

Illustration.—T. B. Arthur ships a consignment of goods costing $800 to L. O. McGinnis to be sold on his account. Arthur pays insurance $12, and cartage $5. McGinnis pays expenses amounting to $21.42. He sells the goods for $1,300 and charges 5% commission.

Books of T. B. Arthur:

(a) *When goods are shipped:*		
Consignment, L. O. McGinnis, No. 1	$ 800.00	
Purchases		$ 800.00
Consignment, L. O. McGinnis, No. 1	$ 17.00	
Cash		$ 17.00
Insurance $12, cartage $5.		
(b) *Upon receiving account sales:*		
Consignment, L. O. McGinnis, No. 1	$ 86.42	
L. O. McGinnis	1,213.58	
Consignment, L. O. McGinnis, No. 1		$1,300.00
To credit consignment with total amount sold, charge it for expenses paid by factor, and charge factor for balance.		
Consignment, L. O. McGinnis, No. 1	$ 461.58	
Consignments Profit and Loss		$ 461.58
To carry profit to profit and loss.		
(c) *Upon receiving payment:*		
Cash	$1,213.58	
L. O. McGinnis		$1,213.58

Books of L. O. McGinnis:

(a) *When goods are received:*		
Consignment	$ 800.00	
Consignments-In		800.00
Memo account for goods received on consignment from T. B. Arthur.		
T. B. Arthur, Principal	$ 21.42	
Cash		$ 21.42
Expenses paid.		
(b) *During transactions:*		
Accounts Receivable	$1,300.00	
T. B. Arthur, Principal		$1,300.00
For sale of goods.		
T. B. Arthur, Principal	$ 65.00	
Commissions		$ 65.00
For commission of 5%.		
Consignments-In	$ 800.00	
Consignments		$ 800.00
To reverse.		
(c) *When cash is sent:*		
T. B. Arthur, Principal	$1,213.58	
Cash		$1,213.58

Under second plan suggested under "Entries on Books of Consignee" (page 1475), on books of Arthur:

(*a*) *becomes:*

Consignment, L. O. McGinnis, No. 1	$ 800.00	
Consignments-Out		$ 800.00
Insurance	$ 12.00	
Cartage	5.00	
Cash		$ 17.00

and (*b*) *becomes:*

Expense	$ 21.42	
Commissions	65.00	
L. O. McGinnis	1,213.58	
Sales		$1,300.00
Consignments-Out	$ 800.00	
Consignment, L. O. McGinnis, No. 1		$ 800.00

Branch House Accounts

BRANCH vs. AGENCY.—An agency acts as a local salesman, securing buying orders and forwarding them to the head office. Head office assumes all responsibility for the sale and pays agent a commission for securing the order. A branch is more highly organized and possesses a greater degree of self-management. Usually it makes its own sales, and it may pass on its own credits and make its own collections. Sometimes it pays all branch expenses. The degree of autonomy of branches varies greatly. In some cases the branch deposits all receipts to credit of home office, in which case its own disbursements are made from a petty cash fund run on the imprest basis. In other cases the branch receives and pays out funds and at intervals remits surplus amounts to head office as if it were independent. As a consequence of varying conditions of interrelationship between branch and main office varying methods of control have been adopted. If it is necessary for local management to have on hand a large stock of merchandise and to exercise a great amount of discretion, the unit must be largely independent except in so far as it forms a part of a more general organization.

PRINCIPLES OF BRANCH ACCOUNTING.—The three chief factors to be kept in mind are: (a) method of control by head office, (b) results secured by each branch, and (c) method of presentation of results. No exact line of distinction can be drawn between agency and branch organizations. In case of a simple sales agency little in the way of an accounting control is necessary. The agency is supplied with an expense fund and sends orders and sales to head office. The expense fund should be operated under the imprest system. On the head office books a separate record of the activities of each branch must be kept. In some instances the records kept at the branch office are comparatively simple; in other instances they are fairly complex. Periodic reports may be required by the head office of all branches.

Illustration No. 1.—Home office in Philadelphia sends $200,000 to branch manager in St. Louis, who is to construct a factory building. In home office books an account is opened with "St. Louis Branch Investment" and is debited for the amount advanced, $200,000. On books of St. Louis branch an account "Home Office" is credited with the $200,000 advanced. Balance sheet of the branch is somewhat as follows:

Balance Sheet—St. Louis Branch
As at December 31, 1923

Cash	$ 15,000	Home Office	$200,000
Plant	140,000	Accounts Payable	20,000
Machinery	30,000		
Inventories	35,000		
	$220,000		$220,000

When home office sets up its balance sheet, it may either bring in the account "St. Louis Branch Investment" as an asset, or it may make a journal entry bringing into home office books the items on the branch's books which the "St. Louis Branch Investment" account stands for. The first plan is usually followed, and is somewhat simpler.

During the following year home office advances an additional $100,000, and the branch earns a profit of $27,000. Before bringing this profit into books of home office, latter's books show "St. Louis Branch Investment" charged with $300,000; "Home Office" account on books of branch showing an equal credit before the net profit for the year, $27,000, is transferred to it. Balance sheet of branch should be somewhat as follows on Dec. 31, 1924:

Balance Sheet—St. Louis Branch
As at December 31, 1924

Cash	$117,000	Home Office	$300,000
Plant	180,000	Accounts Payable	16,000
Machinery	35,000	Profit and Loss	27,000
Inventories	11,000		
	$343,000		$343,000

The profit and loss item on branch books should be transferred to "Home Office" account, increasing it to $327,000; while on books of home office "St. Louis Branch Investment" should be charged and Profit and Loss credited. Instead of showing "St. Louis Branch Investment" charged with $327,000, the home office on its balance sheet may bring in the assets and liabilities of the branch. This illustration indicates a great degree of autonomy on part of the branch, which acts independently of head office in all routine matters, such as buying and selling. If the home office should at times find it desirable to make purchases for the branch, home office makes an entry charging Branch, and branch office credits Home Office account, at same time charging Purchases. If branch sells goods but home office receives payment therefor, home office credits Branch and branch debits Home Office and credits customer.

Illustration No. 2.—Assume that head office supplies cash required to begin operations, also all stock-in-trade. Branch keeps complete records. During year head office forwards $6,000 cash and $70,000 stock-in-trade. Branch sells $37,000 on account and $27,000 for cash. Expenses amount to $10,500. Collections from customers $33,000. Cash is remitted to head office $50,000. Closing inventory of stock-in-trade is $20,000.

Entries on branch books, in summary form:

Cash	$ 6,000	
Head Office		$ 6,000
Merchandise	$70,000	
Head Office		$70,000
Accounts Receivable	$37,000	
Merchandise		$37,000
Cash	$27,000	
Merchandise		$27,000
Expenses	$10,500	
Cash		$10,500
Cash	$33,000	
Accounts Receivable		$33,000
Head Office	$50,000	
Cash		$50,000
Inventory	$20,000	
Merchandise		$20,000
Merchandise	$14,000	
Profit and Loss		$14,000
Profit and Loss	$10,500	
Expenses		$10,500
Profit and Loss	$ 3,500	
Head Office		$ 3,500

Entries on head office books, in summary form:

Branch Office	$76,000	
Cash		$ 6,000
Merchandise		70,000
Branch Office	$ 3,500	
Profit and Loss		$ 3,500

Illustration No. 3.—Merchandise is sent to branch at a fictitious price and branch manager is not to be permitted to know profit or loss secured. One account is opened on head office books to record merchandise transactions with branch and another to record all other transactions with branch. Transactions are same as in illustration No. 2 above, except that merchandise is billed to branch at $80,000, a fictitious figure $10,000 in excess of its true cost, and closing inventory is also taken at same price and amounts to $22,857.14.

Two accounts opened on branch books are "Head Office General" and "Head Office Merchandise." Other accounts appear on branch books as in preceding illustration.

Entries on books of branch:

Cash	$ 6,000.00	
Head Office General		$ 6,000.00
Purchases from Head Office	$80,000.00	
Head Office Merchandise		$80,000.00
Accounts Receivable	$37,000.00	
Sales		$37,000.00
Cash	$27,000.00	
Sales		$27,000.00

Expenses	$10,500.00	
Cash		$10,500.00
Cash	$33,000.00	
Accounts Receivable		$33,000.00
Head Office General	$50,000.00	
Cash		$50,000.00
Inventory	$22,857.14	
Purchases from Head Office		$22,857.14
Head Office Merchandise	$57,142.86	
Purchase from Head Office		$57,142.86
Sales	$64,000.00	
Head Office General		$64,000.00
Head Office General	$10,500.00	
Expense		$10,500.00

"Head Office General" account serves as a summary account in place of Profit and Loss. This is preferable because profit or loss cannot be determined on books of branch. Expenses are purposely grouped under one account.

Entries on books of head office:

Branch Office	$ 6,000.00	
Cash		$ 6,000.00
Branch Office Merchandise	$80,000.00	
Sales to Branch		$80,000.00
Cash	$50,000.00	
Branch Office		$50,000.00

At close of period:

Branch Office	$64,000.00	
Sales		$64,000.00
Expenses	$10,500.00	
Branch Office		$10,500.00

Or this alternative:

Branch Office	$64,000.00	
Branch Profit and Loss		$64,000.00
Branch Profit and Loss	$10,500.00	
Branch Office		$10,500.00

When the latter alternative is followed activities of branch are not merged with activities of head office as they are under former alternative. When former alternative is pursued it is necessary to make up a statistical abstract for each branch showing the results of its activities for the period.

Where policy of billing goods to branch at a fictitious price is pursued, an adjustment is necessary on books of head office to show true cost of goods sold by branch. Information necessary to accomplish this is found in memorandum accounts covering merchandise transactions with branch. If, for example, goods are billed at 20% above cost, billed price is 120% of cost and by dividing billed price of goods sold by 1.2, their true cost is determined. If all activities are merged with head office activities, consolidated gross profit can be ascertained by finding cost of all inventories at branches and merging this with head office inventory. But if, as is usual, it is desirable to ascertain results secured by each branch and to set these up on head office books, billed cost of sales made

by each branch must be converted to a true cost basis and this amount must then be credited to head office purchases account and charged to branch profit and loss account. When all such transfers have been made, balance remaining in head office purchases account is proper amount to be considered in determining head office gross profit.

In above illustration goods were shipped to branch at a billed price of $80,000 and inventory at close was $22,857.14, same valuation; hence billed value of goods sold is $57,142.86. Goods were billed to branch at 114.28% of cost. Hence true cost was $57,142.86 ÷ 1.1428 = $50,002.50. Adjustment is made as follows:

Branch Profit and Loss	$50,002.50	
Purchases		$50,002.50

Branch Profit and Loss now stands charged and credited as follows:

Branch Profit and Loss

Branch Office	$10,500.00	Branch Office	$64,000.00
Purchases	50,002.50		
Balance, Gross Profit	3,497.50		
	$64,000.00		$64,000.00
		Balance, Gross Profit	$ 3,497.50

The branch inventory of goods on hand must also be converted to a cost basis and be included in head office inventory before head office gross profit can be determined.

BRANCH OFFICE REPORTS.—No universally applicable forms of reports can be prescribed. If branch office books are kept in duplicate, duplicates being sent to head office at least once a month, head office can secure all necessary data therefrom. Sometimes head office requires daily duplicate copies of all business papers reflecting transactions at branch. Sales tickets are manifolded, one copy being sent to head office and if branch keeps a bank account a duplicate ticket of all deposits is sent to head office. Banker forwards all canceled checks to head office. Instead of daily reports, periodic summaries may be preferable. If traveling auditors are maintained, daily reports are unnecessary.

FOREIGN EXCHANGE.—Equivalence of one currency expressed in terms of another is **rate of exchange.** **Par rate of exchange** is the rate at which two currencies exchange on a basis of equality. Between United States and England it is $4.8665, as the gold content of that number of dollars equals the gold content of one pound sterling. The **market rate of exchange** varies from the par rate. When foreign branches exist the problem of conversion of foreign money, in which books of branches are kept, into terms of the currency of the country in which head office is located arises, in order that at the close of each accounting period the results may be incorporated in the books of head office. Since all transactions of the branch cannot be converted at rate of exchange prevailing at time transactions occur, it is customary to convert at the rate prevailing at close of fiscal period.

Branch books contain a **Head Office Adjustment account** representing the

head office's ownership in the branch, and a similar complementary account appears on books of head office. Sometimes in addition a **Remittance account** is carried, in which are entered remittances from branch to head office.

Branch trial balance must be converted before being incorporated in books of head office and chief problem is to determine on what basis the various items therein should be converted. Under certain conditions a uniform rate of conversion may be employed, but under other conditions such a uniform rate for all items would prove inequitable. If different rates are used, after conversion branch trial balance is usually out of balance. Difference is charged or credited to a **Fluctuations in Exchange account.** Conversion may show either a profit or a loss. Either of two methods of handling the resulting profit or loss may be followed.

1. Set up a **reserve for Fluctuations in Exchange account,** credit all conversion profits to it, and charge all conversion losses against it. In case a loss occurs in first accounting period, appropriate sufficient profits to wipe it out.
2. Regard the result as a current profit or loss, as the case may be.

Except under abnormal conditions the item is not likely to be large and debits and credits offset each other fairly closely.

The basis of conversion is the rate adopted. If fluctuations are not abnormal an **average rate** is usually sufficiently accurate, all profits or losses resulting from differences between actual rates and the average rate being carried to the Fluctuations in Exchange account. If branch is located in a country having a silver currency or a depreciated currency, an average rate is not satisfactory. Following is a summary of practices to be followed under such conditions.[3]

First convert foreign currency into dollars at following rates:

1. Fixed assets at same rate as before, i.e., rate at time of purchase, or at average rate for purchases of a fiscal period. Reason for this is that fluctuations in value of fixed assets should not affect results of period.
2. Floating assets and liabilities at rate current as of date of balance sheet.
3. Revenue items at an average rate for period.
4. Remittances at actual rates paid.
5. Control or Adjustment account at same rate as was established on head office books at last period.

To secure average rate for fixed assets, take rate prevailing at end of each month of year and divide the sum by 12. If rate resulting is below par, difference is a credit to capital expenditure and a charge to Profit and Loss on books of head office. For same item the branch charges Exchange and credits Head Office account.

Convert current assets and liabilities at rates current at balance sheet date. Convert revenue items at average rate. Remittance account should not be changed because it represents actual cash paid for cash transmitted, and there is no reason for changing the rate thus used at various times during the period. Same is true of the Control or Adjustment account. After all conversions are made, a reserve should be provided to cover losses on exchange not provided for by such conversion. This is desirable because the conversion is merely an estimate of the worth in head office currency of the branch business.

Illustration.—Trial balance of Liverpool branch of a Philadelphia concern is as follows:

[3] R. B. Kester, Accounting Theory and Practice, Vol. II, pp. 546–548.

Trial Balance—Liverpool Branch

Philadelphia Control ($4.7475)		£150,000
Remittances	£ 70,000	
Purchases	120,000	
Sales		150,000
Expenses	10,000	
Cash	6,000	
Accounts Receivable	16,000	
Accounts Payable		7,000
Inventory	70,000	
Fixtures	15,000	
	£307,000	£307,000

Inventory at close £75,000.

On Philadelphia books Liverpool Control account shows a balance of $712,125, and Remittance account $332,785, composed of five drafts, as follows:

£10,000 @ $4.75
20,000 @ 4.73825
10,000 @ 4.76
10,000 @ 4.752
20,000 @ 4.77

It is required to set up on Philadelphia books results of Liverpool transactions for the period and show Liverpool Control and Liverpool Profit and Loss accounts after adjustment.

Current rate of exchange is $4.7545.
Average rate is $4.762.
Rate when fixed assets were purchased was $4.86.
Depreciation and bad debts are to be ignored.
A reserve for fluctuation of exchange is to be set up.

	£	£	Rate of conversion	$	$
Philadelphia Control		150,000	4.7475		712,125.00
Remittances	70,000		(See above)	332,785.00	
Purchases	120,000		4.762	571,440.00	
Sales		150,000	4.762		714,300.00
Expenses	10,000		4.762	47,620.00	
Cash	6,000		4.7545	28,527.00	
Accounts Receivable	16,000		4.7545	76,072.00	
Accounts Payable		17,000	4.7545		80,826.50
Inventory	70,000		4.7545	332,815.00	
Fixtures	25,000		4.86	121,500.00	
Fluctuation of Exchange Reserve					3,507.50
	317,000	317,000		1,510,759.00	1,510,759.00

FORM 28. Conversion of Foreign Branch Trial Balance

Closing inventory £75,000 @ $4.7545 = $356,587.50.

Entries to adjust Philadelphia books:

Remittances	$332,785.00	
Liverpool Control		$332,785.00
To credit Liverpool with its remittances, as follows: £10,000 @ $4.75 . . . . $47,500.00 20,000 @ 4.73825 . . . . . 94,765.00 10,000 @ 4.76 . . . . 47,600.00 10,000 @ 4.752 . . . . 47,520.00 20,000 @ 4.77 . . . . 95,400.00		
Liverpool Control	$714,300.00	
Liverpool Profit and Loss		$714,300.00
To charge Liverpool with its sales: £150,000 @ $4.764		
Liverpool Profit and Loss	$332,815.00	
Liverpool Control		$332,815.00
To credit Liverpool with opening inventory: £70,000 @ $4.7545		
Liverpool Profit and Loss	$571,440.00	
Liverpool Control		$571,440.00
To credit Liverpool with its purchases: £120,000 @ $4.762		
Liverpool Control	$356,587.50	
Liverpool Profit and Loss		$356,587.50
To charge Liverpool with final inventory: £75,000 @ $4.7545		
Liverpool Profit and Loss	$ 47,620.00	
Liverpool Control		$ 47,620.00
To credit Liverpool with its expenses: £10,000 @ $4.762		
Liverpool Control	$ 3,507.50	
Reserve for Exchange Fluctuations		$ 3,507.50
To charge Liverpool with profit from conversion.		
Liverpool Profit and Loss	$119,012.50	
Profit and Loss		$119,012.50
To carry Liverpool branch profit to general profit and loss.		

FOREIGN SELLING AGENCIES.—If foreign branch serves simply as a **selling agency,** the home office makes out the invoice but in terms of the foreign currency. A separate set of records should be kept for each foreign currency involved. The books should consist of a foreign sales journal, a customers ledger, a cash receipts journal, and, if necessary, foreign notes receivable and sales returns and allowances journals. By this plan all transactions for sales and returns and allowances thereon are kept in terms of the foreign currency. At certain periods the transactions thus recorded should be converted into home currency and brought into general ledger. Under normal conditions a fixed rate of exchange may be sufficiently accurate. Under abnormal conditions the prevailing rate for the day or possibly the monthly average of daily rates may be used. When converted the general ledger Accounts Receivable

LIVERPOOL CONTROL

Item	Rate	£	$	Item	Rate	£	$
Balance, end last period		150,000	712,125.00	Remittances	Sec. J(1)	70,000	332,785.00
Liverpool Profit and Loss (Sales)	4.762	150,000	714,300.00	Liverpool Profit and Loss (Opening Inventory)	4.7545	70,000	332,815.00
Liverpool Profit and Loss (Final Inventory)	4.7545	75,000	356,587.50	Liverpool Profit and Loss (Purchases)	4.762	120,000	571,440.00
Reserve for Exchange Fluctuations			3,507.50	Liverpool Profit and Loss (Expenses)	4.762	10,000	47,620.00
				Balance		105,000	501,860.00
		375,000	1,786,520.00			375,000	1,786,520.00
Balance		80,000	501,860.00				

FORM 29. Foreign Branch Control Account

LIVERPOOL PROFIT AND LOSS

Opening Inventory	$ 332,815.00	Sales	$ 714,300.00
Purchases	571,440.00	Closing Inventory	356,587.50
Expenses	47,620.00		
Profit and Loss, General	119,012.50		
	$1,070,887.50		$1,070,887.50

FORM 30. Foreign Branch Profit and Loss Account

and Sales accounts are debited and credited, respectively, for sales, and credited and debited, respectively, for returns and allowances. Total of discount column of cash receipts journal, after being converted at the average rate, should be charged to Sales Discount account and credited to Accounts Receivable controlling account.

For cash received conversion is at actual rate at which foreign draft is converted when sold to a banker. This necessitates an adjustment of the Accounts Receivable control to bring it into agreement with the foreign customers ledger when latter is converted at the average rate. In general, cash books provide two additional columns: **"profit on exchange"** and **"loss on exchange,"** respectively. When a foreign draft is received it is entered in foreign cash receipts book and posted therefrom to customer's credit. When draft is sold it is entered in accounts receivable column at fixed average rate of conversion and difference between this figure and amount actually received from bank for sale of draft is entered in profit on exchange column or in loss on exchange column, as case may be.

Voucher Systems

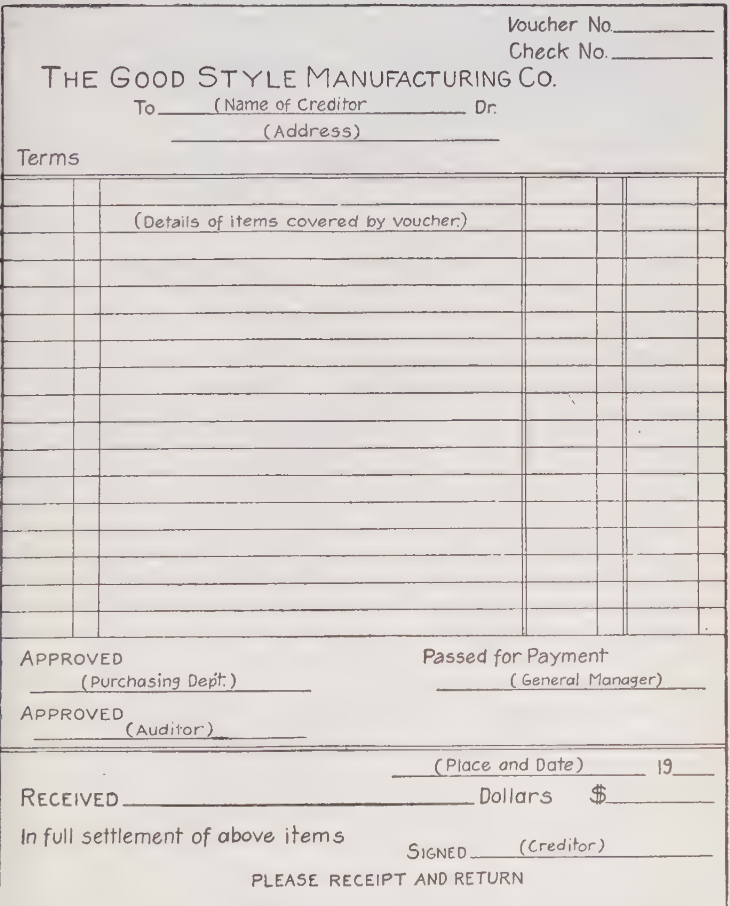
EVOLUTION OF PURCHASE JOURNAL.—Originally the **purchase journal** was a scrap book in which invoices were posted. It contained an extension column for amounts of invoices. This column totaled gave purchases for periods under consideration, and, where necessary, two or more columns gave the desired analysis of purchases. The modern purchase journal is either bound or loose-leaf. Analysis of purchases is secured by introducing the necessary columns. Name of creditor, amount of invoice, and number of invoice appear. When purchase invoices are received **duplicate purchase orders** may be corrected to correspond and then be used as basis for purchase journal entry. A step in the development of the purchase journal has been the entering therein of such expense items as salaries, supplies, etc., as purchases, the entry being made at time of securing the service, not when paid for. By using a formal document as basis for the entry, what is known as the **voucher record system** has been developed and the purchase journal has become the **voucher register.**

If business engaged in is manufacturing, the problem of purchasing is more complicated than in case of one buying merchandise merely to sell it again in the same form. A larger variety of purchases must be made and a rather complicated group of expenses must be accounted for. The introduction of a sufficient number of columns enables the desired analysis to be secured.

An essential feature of the voucher register is the manner in which accounts with creditors are handled. Instead of being posted to an accounts payable subordinate ledger, the voucher register itself serves the purpose of the subordinate ledger. In many concerns the creditors' list is undergoing constant change, old names being dropped and new ones being added. If an accounts payable ledger is kept it is necessary to be making changes therein constantly. By eliminating the necessity of posting to an accounts payable ledger much detailed work is avoided.

THE VOUCHER.—In a broad sense a voucher is some sort of receipt or evidence. In a narrower sense it is a formal document containing an itemized statement of goods or services and a space for receipting by the vendor when he receives payment therefor. The essential feature of the voucher as thus understood is that it provides for receipting for specific items or services. In addition to providing for a statement of bill being paid and proper space for acknowledgment of receipt by payee, provision is also usually made for certification as to correctness of details by an official of the company issuing the

voucher and for a distribution of items according to the classification of accounts of issuing company. Such a voucher is shown in Forms 31a, 31b. Face of form provides for detailed statement of bill, approval by proper authorities, and


Voucher No.________
Check No.________

THE GOOD STYLE MANUFACTURING CO.

To ____(Name of Creditor________ Dr.
____(Address)________

Terms

(Details of items covered by voucher)

APPROVED
____(Purchasing Dep't.)________

Passed for Payment
____(General Manager)________

APPROVED
____(Auditor)________

____(Place and Date)________ 19____

RECEIVED ________________ Dollars $________

In full settlement of above items

SIGNED ____(Creditor)________

PLEASE RECEIPT AND RETURN

FORM 31a. Voucher (face)

(From R. B. Kester, "Accounting, Theory and Practice," Vol. II.)

space for receipt by payee. On reverse side is space for distribution to accounts to be charged. This entry may be made by bookkeeper either from the original or from a duplicate office copy thereof.

THE VOUCHER CHECK.—A chief objection to the above voucher is that payee frequently fails to receipt and return it, thus leaving files of payor incomplete. To remedy this defect the **voucher check** has been contrived. It is a combination of voucher and check. Indorsement of check serves as receipt of

CHARGE TO		
Total forward		
Office Salaries		
Office Supplies		
Office Expenses		
Tel. & Tel.		
Rent		
Insurance		
Interest		
Machinery		
Furniture & Fixtures		
TOTAL		

No.________

(Name of Creditor)

(Address)

GOOD STYLE MANUFACTURING CO.
YONKERS. N.Y

VOUCHER

PAID BY CHECK No.______ $______

DATE __________

CHARGE TO		
In-Freight & Cartage		
Direct Labor		
Indirect Labor, Factory		
Light, Heat & Power		
Factory Supplies		
Raw Materials		
Salesmen Salaries		
Sales Travelling Expense		
Advertising		
Out-Freight		
Delivery Expense		
TOTAL		

Form 31b. Voucher (reverse)

bill and, being attached to check, it inevitably is returned to party issuing same. Legality of signature of payee serving both as indorsement and receipt has been established. Voucher checks are both folded and single in form. Folded voucher check is shown in Form 32. Single voucher check is shown in Form 33

Single form is appropriate where detailed statement of invoices is not required. It is frequently used for dividend payments.

VOUCHER REGISTER FORM.—The essential data on the voucher is shown properly entered and distributed in the voucher register. It is essentially a purchases journal but with expanded functions so that it also takes the place of the accounts payable ledger. In its essential form it provides space for date, name of creditor, voucher number, amount and distribution of payment, and mode of payment. A form of voucher register is shown in Form 34. A slightly modified form of the voucher register is shown in Form 35.

MAKE ALL ENDORSEMENTS BELOW

DO NOT DETACH

NEW YORK

IRVING NATIONAL BANK 1-67

NEW YORK

$

THROUGH NEW YORK CLEARING HOUSE

TO THE ORDER OF

IN FULL PAYMENT OF THE ACCOUNT STATED IN THE VOUCHER WITHIN THIS CHEQUE

THE SMITH-JONES COMPANY

Form 32a. Folder Voucher Check (face)

ROUTINE PROCEDURE.—After an invoice has been checked up and approved, a voucher is made out for it, the distribution made thereon, and entry made in voucher register. Vouchers are numbered consecutively and are entered in same sequence in voucher register, amount thereof in vouchers payable column and distribution in analytical columns. The sundries column is intended to receive items which do not occur with sufficient frequency to make special columns therefor desirable. The final column is intended to show unpaid vouchers at end of period, and total of these should agree with vouchers payable control in general ledger. In practice the number of columns is sometimes much greater than that shown in forms here given. By use of short-margin insert sheets as many columns as desirable may be introduced, subject only to physical limitations.

At end of each accounting peroid voucher register columns are totaled and

posted. This posting represents a complete double entry, but it is not now customary to make a general journal entry of it. It can best be posted direct

VOUCHER CHECK

THE SMITH-JONES COMPANY

137 EASTON STREET NEW YORK CITY

FAVOR OF ....

ADDRESS ....

DATE	DESCRIPTION	

DISTRIBUTION

Invoice Approved by ....

....

Correct ....

Registered V.R. .... C.B. ....

Approved for Payment ....

Form 32b. Folder Voucher Check (reverse)

HARRIMAN NATIONAL BANK No. ....

New York City ....

Pay to the order of .... $ ....

.... Dollars.

THE ROCKTON REALTY CO.

By .... Treas.

Approved

....
(Auditor)

If incorrect, return

Form 33. Single Voucher Check

as shown in Form 35. In case of the sundries column items must be posted in detail, as indicated in Form 34. Before posting, proof of accuracy of items

Voucher Register

Date	Customer's Name and Address	Vo. No.	Terms	Vouchers Payable	Disct. on Purchases	Expense	Advertising	Wages		Sundries		Payment		Unpaid Vouchers
										Acct.	Amt.	Date	How pd.	

FORM 34. Voucher Register

Voucher Register

Date		Vo. No.	Creditor	Explanation Terms, etc.	Vouchers Payable	Purchase Discount	Raw Materials	In-Freight Cartage	Direct Labor	Indirect Labor
19—										
Apr.	1	986	Jackson & Son	n/20	12,000 50		10,000 00	500 50		
	2	987	Smythe Cooperage Co.	2/10, 1/30, n/60	2,205 10	45 00				
	3	988	B. & M. Furniture Co.	n/30	1,530 00			30 00		
		989	Gavell Iron Works	1/10, n/30	5,074 34	51 26	5,000 00	90 30		
	4	990	Hardware Specialties Co.	Net	3,750 00			100 00		
	5	991	Pay-Roll		2,100 00				1,200 00	250 00
					L.52 113,879 10	L.79 11,890 30	L.58 32,760 50	L.59 7,260 20	L.63 45,870 00	L.64 5,690 00

Form 35a. Voucher Register (left-hand page)

Voucher Register

Factory Expense	Sales Salaries	Selling Expense	Office Salaries	Office Expense	Sundry Charges	L. F	Account to be Charged	Payment Date	Payment Manner	Unpaid Vouchers
					1,500 00	25	Machinery & Tools	4/21	C 41	
2,000 00		250 10						4/12	C 33	
					1,500 00	31	Furniture & Fixtures			1,500 00
				35 30				4/13	NJ 6	
		3,500 00		150 00						3,750 00
	300 00		350 00					4/5	C 29	
L.65 4,129 80	L.70 15,760 20	L.72 3,345 60	L.73 4,500 00	L.80 2,915 75	3,537 35					26,760 25

Form 35b. Voucher Register (right-hand page)

to be posted should be made by comparing totals of distributive columns with total of vouchers payable column. In posting, the distributive column totals are debits, while the totals of the vouchers payable column and discount on purchases columns are credits. Under voucher register system it is unnecessary to enter checks in detail in cash book because all are charges to vouchers payable; yet it is usually the practice to do so. Checks are sometimes given a new series of numbers when issued to pay vouchers. These are known as **treasurer's numbers** and the checks are entered in their sequence. These are used because vouchers are not necessarily paid in order of their numbers. Check should be made out for net amount of voucher if there is a deductible cash discount. An unpaid vouchers tickler is used for filing vouchers which are to be paid at a later date, arrangement being such that they come up automatically for payment on proper date. Original invoice should be filed temporarily in a file arranged alphabetically. When voucher is paid it should be filed permanently with it.

An **alphabetic index of creditors** is frequently desirable to permit reference to all transactions with any given creditor. This is usually in form of a card index, one card being assigned to each creditor. Thereon is noted a list of all vouchers representing transactions with a given creditor. To a certain extent this index fulfils the function of a customers ledger by making it possible to collect data on all transactions with any given party.

When voucher system is to be introduced where a creditors ledger is in operation, open accounts in creditors ledger are closed and transferred to voucher register. Either of two ways may be followed: (1) Balance creditors ledger accounts, indicating transfer to voucher register in explanation column. In voucher register each item of an account payable should be vouchered separately, because different credit and discount terms frequently apply. Distribute amounts to sundry column and charge to Vouchers Payable control account. Total all columns and rule off. Totals may or may not be posted, as they represent equal debits and credits to the vouchers payable controlling account. (2) Leave register open and include credit to Vouchers Payable account with total of vouchers payable at end of current period. A corresponding charge must then be made of amounts carried to sundry column, as explained above.

RETURNS AND ALLOWANCES.—If adjustment can be made before voucher is made out, voucher is for net amount, so that no change is necessary. No account is required for returns and allowances. But when this cannot be done, make entry of allowances in small red ink figures just under voucher affected, indicating voucher number in red. Give amount of allowance in both vouchers payable columns and in columns in which distribution is made. When summarizing the columns at end of month deduct red ink amounts from totals of black ink figures and bring down net amounts as totals.

An **alternative procedure** is to cancel the original voucher and issue a new one in its place. Distribution is made in voucher register to sundry column, charging Vouchers Payable, Purchases having been charged from original voucher. In journal form the transaction is as follows:

Vouchers Payable..............................	$197.20	
Vouchers Payable........................		$175.20
Returns and Allowances......................		22.00
To cancel voucher No. 75 and to authorize in its place voucher No. 89, difference being on account of returned goods.		

Partial payments should be avoided if possible. If necessary, however,

cancel original voucher and in its place issue two new ones, one for amount to be paid, other for balance. On voucher register make cross-reference between old voucher and ones issued in its place in "how paid" column.

Notes payable given in payment of an invoice cancels the voucher payable. Entry is made in general journal or notes payable journal. If voucher checks are used, cancel check on original voucher. Alternative plan is to issue note directly at time of purchase, if feasible, charging Purchases and crediting Notes Payable. When note falls due, make out voucher therefor charging notes payable in the distribution and handle voucher in usual way.

Cash discounts are cared for by providing a purchase discount column in the voucher register, or in cash book, or in both. If all cash discounts are taken, the voucher may be made up for net amount; but this should not be done unless there is certainty that the discount can be made. If voucher is net, enter discount in discount column and carry gross amounts to distribution columns. Sum of totals of voucher payable and discount on purchases columns should equal sum of totals of distribution columns. When this procedure is followed discount column may be dispensed with in cash book or be regarded as a memo column. Since purchase discount is not earned until voucher is paid, at close of fiscal period it is necessary to make an adjustment for discount entered on vouchers not yet paid. If a discount column is kept also in cash book, the amount of this item is the difference between voucher register discount column total and cash book discount column total. Adjustment may be made by charging Purchase Discount account and crediting a Deferred Purchase Discount account. At opening of next period reverse this entry.

An **alternative method** of handling purchase discounts is to make out voucher in gross and post earned discounts from the cash book discount column. Discount column may be omitted in voucher register or used merely as a memo column.

Reserves and Funds

THEORY OF RESERVES.—The development of the theory of reserves has not been wholly satisfactory and uniformity in their uses does not exist. Reserves are used to offset reduction in value of assets, as in case of reserves for depreciation. They are used to provide for future contingencies which may never happen. They are used to represent liabilities the exact amount of which cannot be determined until some future date, as in case of reserves for taxes. Finally they may represent dispositions of surplus for purposes other than dividends. The possible uses of reserves are, therefore, to show:

1. Valuation of assets.
2. Contingent liabilities.
3. Actual liabilities not definitely ascertained as to amount.
4. Surplus.

Since the use of reserves for these various purposes has become established custom it is necessary to secure as logical an outline as possible. The following is given by Professor H. A. Finney:[4]

I. **Profit and loss reserves,** set up by debits to profit and loss, because some expense, properly chargeable to current operations, has resulted in
   (a) A decrease in the value of an asset; or
   (b) The creation of a liability.

[4] *Journal of Accountancy*, Oct. 1922, p. 251.

II. **Surplus reserves,** representing
   (a) Conservative provisions for possible future losses not already incurred; and
   (b) Appropriations of surplus, earmarked as unavailable for dividends because of
      (1) Contracts with bondholders, other creditors, or preferred stockholders, in relation to sinking funds.
      (2) Action by stockholders or directors intended to limit the payment of dividends for various financial reasons.

III. Reserves for **unrealized profits.**

Reserves of Class I are set up because losses or expenses have occurred in the nature of depreciation of assets or the accrual of taxes, thus decreasing net profit. Reserves of Class II represent subdivisions of surplus or accumulated net profits. Reserves of Class III represent unrealized profits not yet properly allocable to surplus. Profit and loss reserves are set up by charges to normal accounts which in turn are closed into surplus. Surplus reserves are always charged to surplus and thus do not affect profit and loss.

Where the decrease in the asset value is exactly measurable reserves should not be employed, but the credit indicating reduction in value should be carried direct to the asset account reduced. An illustration is a leasehold which decreases in value by a fixed definite amount each year. An illustration of proper use of reserves to show liabilities is in case of taxes, amount of which at end of fiscal period is necessarily an estimate. A reserve for accrued wages should not be used because amount of the accrual is definitely ascertainable. Finney suggests the following limitation: "If the loss is contingent and problematical it may be provided for out of surplus, but the provision should not be called a reserve. If the loss is certain in amount it should be recorded otherwise than by a reserve." Also, "Exactly measurable deductions from assets would be recorded by writing down the assets; exactly measurable liabilities for expenses would be recorded in liability accounts. Contingent deductions from assets and contingent liabilities on account of expenses or losses which may or may not occur in the future would be provided for as conservative appropriations of surplus."

Surplus reserves are either contractual or optional. An illustration of former is seen in provision of a trust indenture of bonds providing that surplus be set aside in providing a fund for ultimate redemption of bonds. Same provision sometimes applies to preferred stock. An illustration of latter is found in reservations of surplus for making additions and betterments. Such reserves should be returned to surplus when the liability for liquidation of which they were established has been paid.

Unrealized profit reserves result from writing up of fixed assets due to the increase in their market value. Such increase should not be carried to capital surplus until profit is realized through conversion.

ACCOUNTING PROCEDURE FOR RESERVES.—When the theory is clear the accounting procedure is not usually complicated. In case of profit and loss reserves the charge at end of fiscal period affected is to some nominal account and the credit to a reserve account which receives a designation which indicates its nature. In case of depreciation reserves the charge is to a depreciation expense account and a credit to "Reserve for Depreciation." See section on "Depreciation." In case of bad and doubtful debts, the charge is to a nominal bad debts account and a credit to "Reserve for Bad and Doubtful Debts." In case of surplus reserves the charge is to Surplus and the credit

to an appropriately named reserve account. Thus if surplus is to be reserved for the liquidation of bonded indebtedness, surplus is charged and "Reserve for Bond Redemption" is credited, amount applicable to current period having been ascertained by proper mathematical calculations. See section on "Mathematics." In case of reserves for unrealized profit charge asset whose valuation is increased by appraisal and credit "Unrealized Profits Reserves."

Illustration of Profit and Loss Reserves.—See pp. 1448 above, for illustrations of depreciation and bad debt reserves.

Illustration of Surplus Reserves.—The deed of trust of a bond issue provides that there shall be set aside out of surplus $10,000 at the close of each year to provide for the payment of the bonds at maturity. The entry is:

Surplus	$10,000	
Reserve for Bond Redemption		$10,000

Merely establishing a reserve for redemption of a bond issue does not guarantee that cash will be on hand to make the payments when date of maturity arrives. To do this it may be desirable to establish a **sinking fund.** (See treatment of funds below, pp. 1496-1499.) Other forms of surplus reserve are established in accordance with the same procedure as the above.

Illustration of Unrealized Profit Reserve.—Land owned by an enterprise cost $100,000 but an appraisal made by experts indicates that its present market value is $150,000. The $50,000 is in the nature of an unrealized profit. Were it realized by sale it could be carried to surplus; but since it is not realized, if it is to be reflected on books of account, it must be credited to an unrealized profits reserve, thus:

Land	$50,000	
Reserve for Unrealized Profits		$50,000

If this profit is realized later through sale, the reserve for unrealized profits is then closed into capital surplus.

THEORY OF FUNDS.—Funds may or may not be related to corresponding reserves. Profit and loss reserves serve to preserve capital by retaining sufficient gross income to cover loss resulting from diminishing value of some asset. Surplus reserves serve to retain a portion of surplus in the business, preventing its withdrawal for dividend payments. Neither of these reserves provides for the retention of a fund in form of cash or securities which may be said to represent the income or surplus thus reserved. The wealth which represents this reserved income or surplus is not intact in the form of any one asset but may be regarded as being scattered among all the assets, thus resulting in a greater total of assets than would exist had the reservation not been made. The purpose of a **fund** is to segregate the wealth thus reserved in the form of a special asset account which may be in the form of cash or securities, or possibly in some other form of wealth. Funds are assets and are established by transferring cash to a special account and holding it in that form or using it to purchase securities which are placed in the fund. Funds may be established for a great variety of purposes, as, **sinking funds** for the liquidation of bond indebtedness, **old-age pension funds** to provide pensions for superannuated employees, **improvement and betterment funds** for constructing additional facilities, etc.

ACCOUNTING PROCEDURE FOR FUNDS.—The chief problem in accounting for funds is to ascertain the amount of cash to put aside at a given time in order that, with past and future contributions to the fund, an amount of money will be provided sufficient to accomplish the purpose for which the fund is established. If it is desired to have on hand a definite amount of cash at a

given future date, the amount to be placed aside at the beginning or end of each fiscal period will depend upon the length of time over which the fund is to be accumulated, whether or not interest earned by the fund is to be added to it, and, if so, what rate can be earned and how often it can be compounded. For mathematical principles governing accumulation of funds see section on "Mathematics." When cash is paid into the fund the entry is:

Fund	$......	
Cash		$......

If interest earned by fund is added to it, naturally the contributions are smaller than if interest earned is turned back into the general fund.

Bond Redemption Fund and Reserve Illustrated.—Bonds must be redeemed out of capital or out of profits. Assume that the Johnson Manufacturing Co. sells an issue of bonds at par $1,000,000, receipts therefrom being used to construct new plant. It is necessary to determine as a matter of policy, whether these bonds are to be redeemed out of capital or out of profits. If out of profits net worth will be increased $1,000,000; if out of capital net worth will not be altered, so far as it is affected by the issue of bonds. Balance sheet, after sale of bonds and investment of proceeds, is:

Fixed Assets	$4,000,000	Capital Stock	$3,000,000
Accounts Receivable	200,000	Mortgage Bonds	1,000,000
Cash	110,000	Accounts Payable	310,000
	$4,310,000		$4,310,000

Assume that bonds run ten years and that interest is to be disregarded. Each year $100,000 must be placed in a sinking fund. If this is reserved out of profits, then balance sheet at end of ten years, but before redemption of bonds, stands thus:

Fixed Assets	$4,000,000	Capital Stock	$3,000,000
Accounts Receivable	200,000	Mortgage Bonds	1,000,000
Cash	1,110,000	Accounts Payable	310,000
		Surplus Reserved to Redeem Bonds	1,000,000
	$5,310,000		$5,310,000

When bonds are paid, entry is:

Mortgage Bonds	$1,000,000	
Cash		$1,000,000

after which balance sheet appears as follows:

Fixed Assets	$4,000,000	Capital Stock	$3,000,000
Accounts Receivable	200,000	Accounts Payable	310,000
Cash	110,000	Surplus Reserved to Redeem Bonds	1,000,000
	$4,310,000		$4,310,000

Whereas liabilities have not increased, assets have increased $1,000,000, because bonds have been redeemed out of profits. Had no profits been reserved

and had sufficient fixed assets been converted to redeem bonds (assuming this could be done without loss), balance sheet would be as follows:

Fixed Assets	$3,110,000	Capital Stock	$3,000,000
Accounts Receivable	200,000	Accounts Payable	310,000
	$3,310,000		$3,310,000

This plan leaves the company in the same position as at the beginning.

In the above illustration assumption is made that depreciation is not mentioned. In order to preserve capital as indicated, however, a systematic procedure for handling depreciation is necessary. If depreciation is neglected and bonds are redeemed out of capital the result will be disastrous, because the investment will be diminished.

In the foregoing illustration no actual reservation of cash in form of a sinking fund is made. Whether or not such reservation is desirable is entirely aside from the question whether bonds should be redeemed out of capital or profits. The sinking fund is intended to serve as a guaranty that cash will be forthcoming to pay off a bond issue when due. Usual procedure is for company to pay over to a trustee of the sinking fund periodic instalments which are invested, principal and income thereon to be employed in redemption of bonds. Methods of redemption vary, but here it is assumed tnat whole issue is redeemed at maturity. Ignoring interest, to accumulate a fund of $1,000,000 in 10 years requires ten annual instalments of $100,000 each. When each instalment is paid to trustee, following entry is made:

Sinking Fund Trustee	$100,000	
Cash		$100,000

At end of 10 years balance sheet is as follows:

Fixed Assets	$4,000,000	Capital Stock	$3,000,000
Accounts Receivable	200,000	Mortgage Bonds	1,000,000
Sinking Fund	1,000,000	Accounts Payable	310,000
Cash	110,000	Surplus	1,000,000
	$5,310,000		$5,310,000

Following entry is made when bonds are redeemed:

Mortgage Bonds	$1,000,000	
Sinking Fund		$1,000,000

If a surplus for redemption of bonds had been set up, as in illustration of reserves above, this would now be transferred back to surplus.

Interest on Sinking Fund.—Interest earned by sinking fund may be added to sinking fund or turned back into general funds. If added to sinking fund following entry is required monthly:

Accrued Income on Sinking Fund	$.......	
Sinking Fund Income		$.......
To record interest accrued on sinking fund investment during month.		

When cash is received by trustee in payment of accrued interest, following entry is in order:

Sinking Fund Trustee........................	$.......	
Accrued Income on Sinking Fund..........		$.......
To charge trustee for cash received by him on sinking fund investments.		

If sinking fund trustee turns this cash over to the company, following entry is necessary:

Cash..	$.......	
Sinking Fund Trustee....................		$.......
For cash received by trustee as interest on sinking fund investments, same now being paid over to company.		

RESERVE AND FUNDS IN BALANCE SHEET.—Funds are assets accounts and should appear on the asset side of the balance sheet. Reserves should appear on the liability side of the balance sheet if they are surplus reserves or reserves representing liabilities not definitely ascertained. If they are valuation reserves and therefore complementary to some definite asset account, it is preferable to show them as deductions from the asset in the balance; although some balance sheets show them on the liability side. Form 36 shows the balance sheet of U. S. Steel Corporation which illustrates current practice relative to funds and reserves.

Accruals and Deferred Charges

NATURE OF ACCRUALS AND DEFERRED CHARGES.—Certain kinds of expenses are incurred each day but payment therefor can be made only at certain, sometimes distant, intervals. Other kinds of expenses are paid for in advance of the day to which they are incident. The former are **accruals**; the latter **deferred charges.**

INTEREST.—Interest on money borrowed is an accruing expense representing an accumulating liability incurred for the use of borrowed money. It may be temporary, as in case of bank loans, or a permanent fixed charge as in case of long-term or perpetual bonded obligations. Interest is figured on a percentage per annum basis on amount borrowed, rate normally ranging from 3% to 7%, depending on safety of principal, market conditions, etc. Ordinarily interest is paid at regular intervals determined when loan is made. On mortgage indebtedness interest payments are usually made semiannually, at end of 6-month intervals. In case of loans at banks, one month with privilege of renewal is customary. In such cases interest is paid monthly. Only in exceptional instances are interest periods and accounting periods co-terminous. If all nominal accounts are closed monthly into profit and loss while interest payments are made semiannually and no adjustment is made for accruals at end of each month, each sixth month will bear the interest charge really applicable to six months.

Illustration.—On July 1 a merchant borrows $5,000 for 5 years, interest at 6%, payable semiannually, Dec. 31 and June 30. Interest amounts to $300 yearly, and each semiannual instalment to $150. If he makes no entry in his books until end of first 6-month period, when in cash book he credits Cash and charges Interest for $150, the December Profit and Loss account is charged with interest cost for 6 months. This should be prorated over the 6-month period so that each monthly Profit and Loss account is charged with one months'

Consolidated General

December

ASSETS

Property Accounts:			
PROPERTIES OWNED AND OPERATED BY THE SEVERAL COMPANIES			
Balance of this account as of Dec. 31, 1921, less Depletion and Depreciation Reserves			$1,644,795,075.22
Advanced Mining Royalties:			
Payments for Advanced Mining Royalties		$ 31,673,015.96	
Less—Reserved from Surplus to cover possible failure to realize all of the foregoing		7,000,000.00	24,673,015.96
Mining Royalties—In respect of which non-interest bearing notes of the subsidiary companies have been issued—See Contra			31,234,352.24
Deferred Charges (Applying to future operations of the properties):			
Mine exploration expenses and other charges		$ 2,327,133.78	
Discount on subsidiary companies' bonds sold (Net)		869,245.99	3,196,379.77
Investments:			
Outside Real Estate and Investments in sundry securities, including Real Estate Mortgages		$ 5,693,657.24	
Employees' Land Sales Contracts and Mortgages under Home-owning Plan		8,479,031.03	14,172,688.27
Sinking and Reserve Fund Assets:			
Cash resources held by Trustees account of Bond Sinking Funds		$ 1,407,009.93	
(In addition Trustees hold $146,730,000 of redeemed bonds, which are not treated as an asset.)			
Contingent Fund and Miscellaneous Assets		16,189,211.57	
Insurance and Depreciation Fund Assets and purchased bonds available for future bond sinking fund requirements, viz.:			
Securities	$53,825,106.66		
Cash	2,469,615.71		
	$56,294,722.37		
Less—Amount of foregoing represented by obligations of Subsidiary Companies issued for capital expenditures made	22,288,475.00	34,006,247.37	51,602,468.87
Current Assets:			
Inventories, less credit for Reserve and for amount of inventory values representing Profits earned by subsidiary companies on Intercompany sales of products on hand in Inventories December 31, 1921. (See note opposite)		$241,504,369.79	
Accounts Receivable		63,643,028.45	
Bills Receivable		7,586,968.30	
Agents' Balances		1,452,966.99	
Sundry Marketable Securities (including U. S. Liberty Loan Bonds)		131,462,690.73	
Time and other special Bank Deposits		6,924,462.89	
Cash (in hand and on deposit with Banks, Bankers and Trust Companies, subject to cheque)		116,856,842.99	569,431,330.14
			$2,339,105,310.47

We have audited the above Balance Sheet, and certify that in our opinion it is properly drawn up so as to show the financial position of the United States Steel Corporation and Subsidiary Companies on December 31, 1921.

Price, Waterhouse & Co.,
Auditors.

New York, March 10, 1922.

Form 36. Consolidated General Balance

Balance Sheet

31, 1921

LIABILITIES

CAPITAL STOCK OF UNITED STATES STEEL CORPORATION:		
Common	$508,302,500.00	
Preferred	360,281,100.00	$ 868,583,600.00
CAPITAL STOCK OF SUBSIDIARY COMPANIES NOT HELD BY UNITED STATES STEEL CORPORATION (*Par Value*)		405,642.50
BONDED AND DEBENTURE DEBT OUTSTANDING:		
U. S. Steel Corporation 50 Year 5% Bonds	$217,806,000.00	
U. S. Steel Corporation 10-60 Year 5% Bonds	172,239,000.00	
	$390,045,000.00	
Subsidiary Companies' Bonds, guaranteed by U. S. Steel Corporation	92,567,000.00	
Subsidiary Companies' Bonds, not guaranteed by U. S. Steel Corporation	58,094,561.24	540,706,561.24
CAPITAL OBLIGATIONS OF SUBSIDIARY COMPANIES AUTHORIZED OR CREATED FOR CAPITAL EXPENDITURES MADE (HELD IN TREASURY SUBJECT TO SALE, BUT NOT INCLUDED IN ASSETS OR LIABILITIES)	$ 27,072,000.00	....
SUBSIDIARY COMPANIES' NON-INTEREST BEARING NOTES—Maturing over a period of 36 years, substituted for previously existing mining royalty obligations—Guaranteed by U. S. Steel Corporation (See Contra)		31,234,352.24
MORTGAGES AND PURCHASE MONEY OBLIGATIONS OF SUBSIDIARY COS.:		
Mortgages	$ 158,206.50	
Purchase Money Obligations issued in acquirement of Fixed Property	10,000.00	168,206.50
CURRENT LIABILITIES:		
Current Accounts Payable and Pay-Rolls	$ 39,694,093.59	
Accrued Taxes, not yet due, including Tax Reserves	24,446,945.16	
Accrued Interest, Unpresented Coupons and Unclaimed Dividends	7,448,816.47	
Preferred Stock Dividend No. 83, payable Feb. 27, 1922	6,304,919.25	
Common Stock Dividend No. 70, payable Mar. 30, 1922	6,353,781.25	84,248,555.72
Total Capital and Current Liabilities		$1,525,346,918.20
SUNDRY RESERVES:		
Contingent, Miscellaneous Operating and Other Reserves	$137,352,240.12	
Insurance Reserves	26,580,280.46	163,932,520.58
APPROPRIATED SURPLUS TO COVER CAPITAL EXPENDITURES:		
Invested in Property Account—Additions and Construction		140,898,914.10
UNDIVIDED SURPLUS OF UNITED STATES STEEL CORPORATION AND SUBSIDIARY COMPANIES:		
Capital Surplus provided in organization	$ 25,000,000.00	
Balance of Surplus accumulated by all companies from Apr. 1, 1901, to Dec. 31, 1921	483,926,957.59	
Total Surplus, exclusive of Profits earned by Subsidiary Companies on Intercompany sales of products on hand in Inventories Dec. 31, 1921 (see note below)		508,926,957.59
NOTE.—That part of the Surplus of Subsidiary Companies representing Profits accrued on sales of materials and products to other subsidiary companies and on hand in latters' Inventories is, in this Balance Sheet, deducted from the amount of Inventories included under Current Assets.		
		$2,339,105,310.47

Sheet—U. S. Steel Corporation

interest. To accomplish this an entry should be made at end of each month, before closing, as follows:

Interest	$25	
Interest Accrued		$25

This charges the nominal Interest account with month's due proportion of interest expense and shows the accruing liability in the Interest Accrued account. The latter account, being real, is not closed until interest is actually paid at end of 6-month period, when following entry is made:

Interest Accrued	$150	
Cash		$150

unless the 6th month's interest is not credited to Interest Accrued account, in which case entry is:

Interest	$ 25	
Interest Accrued	125	
Cash		$150

If last month's interest is credited to Interest Accrued, appearance of Interest Accrued account after cash payment of $150 is made, entered, and posted is:

Interest Accrued

Dec. 31	Cash	$150	July 31	Interest	$ 25
			Aug. 31	"	25
			Sept. 30	"	25
			Oct. 31	"	25
			Nov. 30	"	25
			Dec. 31	"	25
		$150			$150

WAGES AND SALARIES.—These may require same treatment as interest payable. Usually salaries are paid monthly and when paid in cash are a charge to a Salaries Expense account. It is only when time of payment does not correspond with time of closing books that the principle of accruals applies. **Wages** are ordinarily paid weekly or biweekly. Since last day of month does not ordinarily correspond with the week-end an overlapping occurs. There must be a correct proration of wages to the two fiscal periods affected.

Illustration.—A merchant pays wages biweekly. Pay-day falls on June 7. May profit and loss should be charged for accruals of wages during last week in May. If one week's wages amounts to $120, adjusting entry required on May 31 is:

Wages Expense	$120	
Wages Accrued		$120

Profit and Loss is charged for wages expense at time of closing and Wages Accrued is a balance sheet account representing a liability. When wages are paid June 7, following entry is made:

Wages	$120	
Wages Accrued	120	
Cash		$240

DEFERRED CHARGES.—Some expenses are paid in advance of time to which they are incident. An illustration is developmental expenses incurred by a new concern in form of advertising and developmental work of various kinds benefits of which last for a period of years. Cost of ore-stripping in mines is an illustration. When money is expended in such work the charge is to a **Deferred Asset** or **Deferred Charges** account. At end of each fiscal period a due proportion thereof is charged to Profit and Loss.

Illustration.—A mining enterprise invests $500,000 in a mine. Investment is distributed as follows: land $300,000, plant $150,000. Balance sheet now stands thus:

Land	$300,000	Capital Stock	$500,000
Plant	150,000		
Cash	50,000		
	$500,000		$500,000

An amount of $40,000 is now spent for stripping ore beds of overlying strata, and it is estimated that sufficient is thus uncovered to last 5 years. Balance sheet now stands thus:

Land	$300,000	Capital Stock	$500,000
Plant	150,000		
Cash	10,000		
Deferred Charges	40,000		
	$500,000		$500,000

One-fifth of cost of ore-stripping, or $8,000, is applicable to profit and loss each year. If books are closed monthly, 1/12 of $8,000, or $666.67, is amount to be charged off.

The Working Sheet

PURPOSE OF WORKING SHEET.—The purpose of the **working sheet** is to insure accuracy of the periodic work of closing books preliminary to the actual work of closing. The summarization is made outside instead of in the books. The actual procedure consists in separating the trial balance into two groups of items—those to be entered in the profit and loss statement and those to be entered in the balance sheet, such adjustments being made as are necessary to make proper separation of all nominal and real items and show effect of all accruals, etc. Ordinary analysis paper may be used for the working sheet. Its columns should be headed as shown in Form 37. The working sheet forms no part of the double-entry books but is set up simply as a process of summarization and adjustment preliminary to formal closing of the books. On pp. 1450 and 1451 are shown a trial balance, and **adjustment data** necessary to the determination of profit and loss and setting up of a balance sheet. On p. 1506 is shown list of **adjusting entries** in journal form. These adjusting entries are not actually entered in the journal. **Working sheet** is shown in Form 36.

U. R. Smart, Work Sheet, December 31, 19—

Account Title	Trial Balance Dr.	Trial Balance Cr.	Adjustments Dr.	Adjustments Cr.	Profit and Loss Dr.	Profit and Loss Cr.	Balance Sheet Dr.	Balance Sheet Cr.
1 New York National Bank	17,600.00						17,600.00	
2 Petty Cash	100.00						100.00	
3 Notes Receivable	15,000.00						15,000.00	
4 Trade Customers	35,000.00						35,000.00	
5 Reserve for Doubtful Accounts		875.00		(f) 482.88				1,357.88
6 Liberty Bonds	3,000.00						3,000.00	
7 Merchandise—Inventory—Initial	30,000.00				30,000.00			
8 Merchandise—Inventory—Final			(a) 26,500.00	(a) 26,500.00		26,500.00	26,500.00	
9 Office Furniture and Fixtures	2,800.00						2,800.00	
10 Deprec. Reserve for Office Furniture & Fixt.		700,00		(b) 280.00				980.00
11 Store Furniture and Fixtures	12,000.00						12,000.00	
12 Deprec. Reserve for Store Furniture & Fixtures		3,000.00		(c) 1,200.00				4,200.00
13 Delivery Equipment	4,500.00						4,500.00	
14 Deprec. Reserve for Delivery Equipment		2,250.00		(d) 750.00				3,000.00
15 Buildings	35,000.00						35,000.00	
16 Deprec. Reserve for Buildings		7,000.00		(e) 1,400.00				8,400.00
17 Land	15,000.00						15,000.00	
18 Notes Payable		12,000.00						12,000.00
19 Trade Creditors		25,000.00						25,000.00
20 Mortgages Payable		17,500.00						17,500.00
21 U. R. Smart, Capital		90,000.00						90,000.00
22 U. R. Smart, Personal	10,500.00						10,500.00	
24 Sales		195,000.00				195,000.00		
25 Sales Returns and Allowances	1,850.00				1,850.00			
26 Purchases	135,000.00				135,000.00			
27 Purchases Returns and Allowances		5,400.00				5,400.00		
28 In-Freight and Cartage	1,350.00				1,350.00			

29 Salesmen's Salaries	13,500.00		(m) 175.00		13,675.00			
30 Selling Supplies and Expense	1,600.00			(k) 200.00	1,400.00			
31 Advertising	4,800.00			(i) 300.00	4,500.00			
32 Out-Freight	400.00				400.00			
33 Delivery Expense	3,300.00				3,300.00			
34 Office Salaries	5,000.00		(p) 100.00		5,100.00			
35 General Expense	2,000.00				2,000.00			
36 Office Expense	4,500.00				4,500.00			
37 Printing and Stationery	750 00			(j) 150.00	600.00			
38 Taxes	2,840 00		(l) 340.00		3,180.00			
39 Insurance	1,750 00			(h) 250.00	1,500.00			
40 Interest Cost	900.00		(n) 50.00		950.00			
41 Collection and Exchange	85.00				85.00			
42 Sales Discount	850.00				850.00			
43 Interest Income		1,500.00		(g) 150.00		1,650.00		
44 Purchase Discount		1,300.00				1,300.00		
45 Sub-Rentals Income		650.00	(q) 50 00			600.00		
46 Special Police on Strike Duty	1,200 00		(o) 150.00		1,350 00			
50 Bad Debts			(f) 482 88		482 88			
51 Depr. of Office			(b) 280.00		280.00			
" " Store			(c) 1,200 00		1,200 00			
" " Delivery Equip			(d) 750 00		750.00			
" " Buildings			(e) 1,400.00		1,400.00			
52 Accrued Income:								
Interest Income			(g) 150.00				150.00	
53 Deferred Charges:								
Insurance Prepaid			(h) 250.00				250.00	
Advertising			(i) 300.00				300.00	
Printing & Stationery			(j) 150.00				150.00	
Selling Supplies			(k) 200.00				200.00	
54 Accrued Expenses:								
Taxes				(l) 340 00				340.00
Salesmen's Salaries				(m) 175.00				175.00
Interest Cost				(n) 50.00				50.00
Special Police on Strike Duty				(o) 150.00				150.00
Office Salaries				(p) 100.00				100.00
55 Deferred Income:								
Sub-Rentals Income				(q) 50.00				50.00
56 Net Profit to U. R. Smart, Personal					14,747.12			14,747.12
Total	362,175.00	362,175 00	32,527.88	32,527.88	230,450.00	230,450.00	178,050.00	178,050.00

Form 37. Work Sheet

(a) Merchandise Inventory—Final	(8)	$26,500.00	
(a) Merchandise Inventory—Final	(8)		$26,500.00
(b) Depreciation of Office Furniture and Fixtures	(51)	$ 280.00	
(b) Depreciation Reserve for Office Furniture and Fixtures	(10)		$ 280.00
(c) Depreciation of Store Furniture and Fixtures	(51)	$ 1,200.00	
(c) Depreciation Reserve for Store Furniture and Fixtures	(12)		$ 1,200.00
(d) Depreciation of Delivery Equipment	(51)	$ 750.00	
(d) Depreciation Reserve Delivery Equipment	(14)		$ 750.00
(e) Depreciation of Buildings	(51)	$ 1,400.00	
(e) Depreciation Reserve for Buildings	(16)		$ 1,400.00
(f) Bad Debts	(50)	$ 482.88	
(f) Reserve for Doubtful Accounts	(5)		$ 482.88
(g) Interest Income (Accrued)	(52)	$ 150.00	
(g) Interest Income	(43)		$ 150.00
(h) Insurance (Deferred)	(53)	$ 250.00	
(h) Insurance	(39)		$ 250.00
(i) Advertising (Deferred)	(53)	$ 300.00	
(i) Advertising	(31)		$ 300.00
(j) Printing and Stationery (Deferred)	(53)	$ 150.00	
(j) Printing and Stationery	(37)		$ 150.00
(k) Selling Supplies and Expense (Deferred)	(53)	$ 200.00	
(k) Selling Supplies and Expense	(30)		$ 200.00
(l) Taxes	(38)	$ 340.00	
(l) Taxes (Accrued)	(54)		$ 340.00
(m) Salesmen's Salaries	(29)	$ 175.00	
(m) Salesmen's Salaries (Accrued)	(54)		$ 175.00
(n) Interest Cost	(40)	$ 50.00	
(n) Interest Cost (Accrued)	(54)		$ 50.00
(o) Special Police on Strike Duty	(46)	$ 150.00	
(o) Special Police on Strike Duty (Accrued)	(54)		$ 150.00
(p) Office Salaries	(34)	$ 100.00	
(p) Office Salaries (Accrued)	(54)		$ 100.00
(q) Sub-Rentals Income	(45)	$ 50.00	
(q) Sub-Rentals Income (Deferred)	(55)		$ 50.00

Remarks on Data.—To set up adjusting entries it is necessary to add certain new accounts on working sheet. On working sheet these are appended at end of the regular trial balance. The first is bad debts, which is followed by others. Certain adjusting entries are not set up in the adjustment columns in same way in which the same items are entered on the ledger, but rather are in accord with use to be made of the particular items in drawing up the periodic statements. Purpose of the columns is not to make the adjustments and summarization in a formal way as is done in the books, but to gather together all adjusting data so that a correct separation of balance sheet and profit and loss items can be made for use in the formal summary entries and in the statements. Thus instead of transferring initial inventory to Purchases account, it remains

under its own title, because it will be needed as a separate item in drawing up the cost-of-goods-sold section of the profit and loss statement. Also, the final inventory is not deducted from purchases, but is set up, debit and credit, in the adjustment columns, opposite the title "merchandise inventory—final," which is inserted immediately following "merchandise inventory—initial." At time of summarizing, the debit item goes into the balance sheet, while the credit item goes into Profit and Loss. This provides in profit and loss columns detailed information needed for the cost-of-goods-sold section of the statement, comprising initial inventory, purchases, in-freight, purchases returns and allowances, and final inventory.

Bad debts adjustment is entered in adjustment columns as a debit to Bad Debts and a credit to Reserve for Doubtful Accounts. Likewise the depreciation entry is shown as a debit to depreciation in detail, the credits going to the various depreciation reserve accounts.

Adjustments covering deferred charges are shown as debits to Deferred Charges to operation classification in detail, offsetting credits being to the various expense accounts as shown in trial balance. These credits in the adjustment column, when combined with corresponding debits in trial balance column, indicate net amount of charge to Profit and Loss. Other classes of adjustment entries follow same procedure.

After all adjustments are made, a complete distribution of items in trial balance and adjustment columns is made either to the profit and loss or the balance sheet columns. The difference between the profit and loss columns thus shows net profit or loss for the period and must be transferred to balance sheet as a vested proprietorship item. Instead of being shown as a definite addition to proprietor's capital, the transfer is indicated as the final item on the work sheet, being a debit in the profit and loss column to balance them, and a credit in the balance sheet columns. This difference, \$14,747.12, is net profit of the period, and when added to credit side of balance sheet column should give a total equal to total of the debit balance sheet column. This transfer of net profits effects a proof of the accuracy of the work.

When this proof is secured the formal profit and loss statement should be drawn up, all material for which is found in the profit and loss columns of the working sheet, where it is arranged in almost the exact order needed for the formal statement. Information for the balance sheet is found in the balance sheet columns, all detail being properly grouped but a rearrangement of the order of some items being necessary. Thus while details of deferred charges to operation are gathered together in one place in the work sheet, in the formal balance sheet this group of items must appear immediately after the current asset section. Profit and loss statement and balance sheet are shown in Forms 19–22 (pp. 1454–1457).

The adjustment columns of the work sheet are the source of data for making the formal adjusting entries made in the journal. These adjusting entries are shown on p. 1451.

These closing entries follow immediately the last current entry of the month in the journal. After these are posted, the ledger reflects the true status of affairs as at date of entries. The next process is to summarize this information. The nominal items are transferred to the Profit and Loss account where they are summarized. The net balance of this account is in turn carried to the vested proprietorship accounts. These closing entries are shown on p. 1452.

The Profit and Loss account, when closed by transfer of net profit to Personal account, is shown in Form 17 (p. 1446).

SECTION 32

GLOSSARY

The definitions which follow are not intended to take the place of a dictionary, but rather to serve as a convenient explanation of the terms most frequently used by accountants, Although, under the present status of accounting terminology, it is not possible to secure definitions which in all instances are beyond criticism, those here presented are based on the best available authorities and have been carefully examined by reviewers. The index to the Handbook should be consulted to locate additional definitions and discussions contained in the the text of other sections.

Abatement.—A deduction or allowance, as, a discount given for prompt payment. **In case of contracts** the deduction is granted by the creditor. **In taxation,** abatement refers to lessening of taxes assessed or recovery of taxes illegally paid.

Abeyance.—State of suspense, as, an estate to which no one is at present entitled, or an account held in suspense for future adjustment or settlement.

Abscond.—To remove oneself clandestinely in order to avoid court processes.

Abstract of Title.—A summary of all deeds, wills, and legal proceedings, giving the names of the parties, the description of the land, and the agreement.

Acceptance.—Defined in Federal Reserve Act as follows: "A draft or bill of exchange drawn to order, having a definite maturity, and payable in dollars, in the United States, the obligation to pay which has been accepted by an acknowledgment written or stamped and signed across the face of the instrument by the party on whom it is drawn; such agreement to be to the effect that the acceptor will pay at maturity according to the tenor of such draft or bill without qualifying conditions." See "Draft," "Bill."

Such instrument without qualifications is sometimes termed an **absolute acceptance.**

In reference to the act of accepting, the term "acceptance" is defined in §132 of the Uniform Negotiable Instruments Law as "the signification by the drawee of his assent to the order of the drawer. The acceptance must be in writing and signed by the drawee. It must not express that the drawee will perform his promise by any other means than the payment of money."

When the drawee merely writes the word "Accepted" on the face of the instrument, followed by date, signature, and place of payment, it is a **clean** or **general acceptance.**

When an instrument is accepted it is said to be honored. It thus becomes the obligation of the drawee.

If a **place of payment** is not named, the instrument is payable at the acceptor's place of business.

If the acceptor adds some qualification to the word "Accepted," the

instrument becomes a **qualified acceptance.** Such qualification relieves previous parties from liability unless made with their knowledge and approval. It should not, therefore, be allowed by the party presenting the draft for acceptance. §141 of the Uniform Negotiable Instruments Law states that an acceptance is **qualified** which is:

1. Conditional; that is to say, which makes payment by the acceptor dependent on the fulfilment of a condition therein stated.
2. Partial; that is to say, an acceptance to pay part only of the amount for which the bill is drawn.
3. Local; that is to say, an acceptance to pay only at a particular place.
4. Qualified as to time.
5. The acceptance of some one or more of the drawees, but not of all.

Dollar acceptance, as used in international trade, refers to an accepted bill of exchange drawn in American dollars.

Bank acceptance is defined by the Federal Reserve Board as "a bill of exchange of which the acceptor is a bank or trust company, or a firm, person, company, or corporation engaged in the business of granting bankers' acceptance credits."

Trade acceptance is a bill of exchange drawn by the seller directly on the purchaser of goods, and accepted by the purchaser.

An acceptance for honor of drawer or an endorser after a bill has been protested for non-acceptance by drawee is an **acceptance supra protest.**

When a party other than the drawee accepts a bill, which the drawee has failed to accept, to save the honor of the drawer, it is an **acceptance for honor.** Such acceptor must look to the drawer for reimbursement.

Accommodation.—Indorsement of another's note as a favor; also a loan of money as a favor. "As a favor" means without consideration. Corporations cannot sign for accommodation. The party signing for accommodation is not liable to the party accommodated, but is liable to any other holder for value. Accommodation is regarded as bad financial practice. More generally, any advance of funds.

Accord and Satisfaction.—An agreement whereby one party having right of action against another permits this latter party to do something in satisfaction of such right of action.

Account.—A detailed statement of items affecting property or claims, listed respectively as debits or credits, and showing excess of debits or credits in form of a balance. Sufficient explanatory matter should be given to set forth the complete history of the account. There need not necessarily be both debits and credits, nor more than one of either of these.

If debits or credits, or both, are made frequently, the account is **active.**

Items held in suspense awaiting future classification or allocation may be charged or credited to an **Adjustment account.**

When desirable to keep a separate accounting for specific shipments of goods, it is known as an **adventure account.** If more than one party is interested in such shipment it is a **joint venture account.**

Asset accounts record values owned. **Liability accounts** record values owed.

Book accounts are kept in books, and show in formal manner the details regarding transactions between parties. To be of legal effect the entries must be original, not transferred or posted.

Capital accounts show the amounts invested in an enterprise, either **net,**

as in case of the capital accounts of proprietors, partners, and stockholders shown on the liability side of balance sheets; or **gross,** as in case of the asset accounts which show both owned and borrowed capital invested.

Cash accounts set forth receipts and disbursements of cash, as well as balance on hand at beginning and end of period.

Clearing accounts are employed to collect items preliminary to their allocation to a more detailed classification of accounts, or preliminary to the determination of the accounts to which such items properly belong.

Contingent accounts are those which list liabilities or assets dependent for their validity upon some event which may or may not occur.

Contra accounts are those which offset each other.

Controlling accounts are those which summarize and afford an independent check upon detailed accounts of a given class which are usually kept in a subordinate ledger. The controlling accounts are kept in the general ledger. The balance of the controlling account equals the aggregate of the balances of the detailed accounts when all postings affecting these accounts are completed.

Current accounts are open or running accounts not balanced or stated.

Deficiency accounts supplement statements of affairs of an insolvent enterprise, showing what items comprise the deficiency of assets subject to lien for payment of unsecured creditors.

Depreciation accounts are expense accounts which are charged periodically with the amounts credited to the respective depreciation reserve accounts.

Depreciation reserve accounts are credited periodically with the amounts charged to contra depreciation expense accounts. Depreciation reserve accounts are **valuation accounts** because they supplement or evaluate the asset accounts for the ultimate replacement of which they are intended.

Discount accounts are accounts which are, (a) either charged with discounts allowed to customers as reward for prompt payment, or credited with discounts secured from creditors by meeting their conditions regarding prompt payment, or (b) accounts which are charged with amounts paid to have notes discounted, or (c) accounts in which are carried unamortized differences between par of bonds sold and the amounts realized at time of sale, such amounts realized being less than the par of the bonds.

Dividend accounts are credited with amounts declared payable as dividends by boards of directors. Entry should be made as of date of declaration. These accounts are charged for amounts disbursed in payment, the charge being made either at time checks are sent out and for the full amount of the dividend, or for the amounts of the individual checks as they are returned for payment.

Donation accounts are credit accounts contra to treasury stock accounts. They are credited at the time treasury stock accounts are charged for amounts of treasury stock donated. If treasury stocks donated are sold at a profit, amounts of profits thus made should be credited to these accounts; if sold at a loss, the amounts of losses should be charged to these accounts. Thereafter, donation accounts should be either closed into capital surplus or be permitted to stand as capital reserves. Donations from other sources than treasury stock may also be credited to donation accounts.

Drawing accounts, in partnership accounting, are charged and credited, respectively, with amounts currently withdrawn by partners to avoid frequent modifications in the partners' capital accounts. Also accounts

of salesmen or other employees to which cash advances made from time to time are charged and against which their commission accounts are later credited.

Economic accounts are those which record currently transactions affecting proprietorship. They are frequently termed **nominal accounts.**

Estate accounts, in executorship accounting, are credited with net worth of estates and profits made in their realization. They are also charged with liabilities of the estates and the various expenses and losses incurred in their realization.

Impersonal accounts record expenses and revenues, assets and liabilities, but do not make reference, in their titles, to persons.

Income accounts show sources and amounts of operating revenues, expenses incurred for operations, sources and amounts of non-operating revenues, fixed charges, net income, and disposition thereof.

Instalment accounts are used in corporation accounting to record instalments on capital stock sold as they fall due. As many instalment accounts are opened as there are instalments. As each instalment falls due, charge instalment account (appending proper number to the account) and credit subscriptions account. When the instalment is paid the account is closed.

Investment accounts record property owned but not used for operating purposes.

Liquidated accounts are those upon which the interested parties are agreed, either specifically, or as the result of lapse of time without objection on the part of the debtors.

Liquidation accounts are those credited with amounts realized on sale of assets and charged with debts paid and expenses, when enterprises are wound up.

Merchandise accounts are charged with costs of buying goods and credited with sales, thus exhibiting gross profit when opening and closing inventories are taken into consideration. It is now customary to subdivide this account into merchandise purchases, merchandise sales, returned purchases, and returned sales.

Merchandise purchases accounts record purchases of merchandise. Sometimes adjustments for returns are made in this account instead of in a returned purchases account.

Merchandise sales accounts record sales of merchandise. Sometimes adjustments for returns are made in this account instead of in a returned sales account.

Nominal accounts are those which, during the accounting period, record changes which affect proprietorship favorably or unfavorably. At the close of each period they are balanced and their net resultant effect shown in the net worth accounts. If their net balances are debits they represent expenses or losses, or decreases of net worth. If their net balances are credits they represent gains, or increases of net worth. It is customary to adopt a **classification** of nominal accounts adapted to the requirements of management.

Open accounts are those not balanced or closed.

Outlawed accounts are those not collectible because the time limit set by the statute of limitations has expired.

Personal accounts are those with individuals, usually customers and creditors.

Profit and loss accounts are set up at the close of accounting periods to

summate profits and losses of the period and show net results upon proprietorship.

Real accounts record assets and liabilities.

Realization and liquidation accounts are employed in winding up businesses or estates, to show disposition of assets and liquidation of liabilities.

Revenue accounts are equivalent to nominal accounts, showing income and expense.

Running accounts show, in chronological order, reciprocal transactions between two parties. Such accounts are operated only when the reciprocal transactions are numerous, and being the result of mutual agreement, may be terminated by either party by notification to the other party.

Sales accounts are rendered by agents to principals in explanation of consigned goods sold. For example, see index.

Sinking fund accounts record periodic instalments paid into sinking funds and interest accretions added thereto.

Surplus accounts record accretions to capital from profits. If the profits result from operations the surplus is **earned surplus.** If from sale of capital assets, from donations, from sale of stock at a premuim, or as the result of revaluation of appreciated assets, the surplus is **capital surplus.**

Stated accounts are those accepted as correct by the persons liable thereon.

Accounting.—The science of accounts, their construction, classification, and interpretation.

Accrue.—Accumulation of wealth or liabilities based on passage of time.

Accrued Expense.—A liability representing expense that has accrued but is not yet due and payable. It is in reality **postpaid expense** (and therefore the opposite of prepaid expense, which is an asset). What is accrued expense to the debtor is accrued income to the creditor.

Accrued Income.—Income that has accrued but not yet due. It is in reality postpaid income (and therefore the opposite of prepaid expense, which is a liability).

Accumulation.—In accounting for bond issues, the procedure by which bonds bought below par are gradually written up to par between date of purchase and date of maturity.

Act of God.—An inevitable occurrence, such as flood, tempests, death, etc.

Action.—In law, the process followed to recover property or secure justice.

Actuary.—One skilled in the application of the mathematical principles applicable to various forms of insurance.

Adjudication.—A court decision or judgment.

Administration.—In law, settlement of estates of intestates. More generally, management of business affairs.

Administrator.—One appointed by the probate court where a person dies intestate to take charge of the decedent's personal property.

Adventure, Joint.—An agreement to engage in a particular transaction in the form of a consignment or shipment of goods. The liability of those participating is limited to the transaction in question.

Agent.—One possessing authority to act for another to a more or less limited extent.

Del credere agents guarantee to their principals payment for goods sold when terms of credit granted by such agents expire.

General agents have implied authority to do all acts connected with the regular businesses of their principals.

Special agents may perform only such acts as are specifically indicated in the authority granted.

Alienate.—To transfer property.

Allocation.—Determination of the proper distribution of a given sum among a series of accounts.

Allonge.—A paper attached to a negotiable instrument to receive indorsements for which no space remains on the instrument itself.

Amortization.—Extinction of a debt by systematic application of instalments to a sinking fund; or reduction of premium or discount incurred on sale or purchase of bonds by application of the effective interest rate.

Amortization of leaseholds refers to the amounts charged to expense due to the expiration of leaseholds, the amounts charged at intervals depending on the life of the leaseholds.

Ancillary.—Referring to letters testamentary or of administration issued supplementary to those regularly granted in another jurisdiction; also to receiverships.

Annuity.—A sum of money payable periodically in instalments. The word means, literally, payable yearly, but the time intervening between payments may be any fixed period.

Deferred annuities are those the payments of which do not begin until some future time. This future time is frequently determined by a death, as where a widow receives an annuity from a life insurance company, the payments beginning upon the date of her husband's death.

Life annuities run for the life of one or more individuals.

Anticipation.—Paying an account before it falls due, for which a rebate additional to the regular cash discount is sometimes made.

Appreciation.—Increase in value of assets.

Arbitrage.—Taking advantage of differences in prices, in two or more markets, by purchasing commodities where they are cheap and selling where they are dear.

Arson.—The wilful and malicious burning of a building.

Asset.—Wealth owned. Assets may be classified in various ways. From the point of view of ease of liquidation they are fixed or quick in varying degrees.

Fixed assets are not readily convertible into cash and in the usual routine of business are not so converted.

Quick assets can ordinarily be readily converted into cash without involving heavy loss.

Assets which in normal course of business are converted into cash are termed **circulating.** Merchandise inventories are examples.

Assets the definite realization of which depends upon future events which may or may not occur, are said to be **contingent.**

Expenses incurred for benefit of future periods are sometimes capitalized as **deferred assets** or as **deferred charges to operation.** See "Prepaid Expense."

Assets which have no physical existence are **intangible.**

Assets having a physical texture are **tangible.**

Assets subject to depletion are termed **wasting.** Examples are mines and timber lands.

Working assets are those consumed in productive processes but which do not enter into the physical texture of the product.

Assign.—To transfer property and rights in action (chose in action).

Attestation.—The evidence by witness as to the execution of any instrument.

Attorney in Fact.—One who acts under sealed authority.

Audit.—Verification of the accuracy of books of account by means of an examination of supporting vouchers, making tests of postings and computations, and determining whether all entries are made in accordance with correct accounting principles, also that there are no omissions.

A **balance sheet audit** is one made only in sufficient detail to satisfy the auditor of the correctness of the income statement and the balance sheet.

A **complete audit** is one made of the accounts for a period which is closed before the audit is commenced. It is customary to submit a final report on the period covered.

A **complete detailed audit** involves the review of all transactions and entries and the checking of all postings, footings, and so on. Usually the work is abridged by using **tests** in place of a complete review of all details.

A **continuous audit** is one carried out by means of occasional visits during the period covered. A final report cannot be submitted until after the close of the period.

Average.—A contribution or adjustment made by merchants shipping goods by steamer, for goods that have been thrown overboard or lost. It is either general or particular. For statistical definition see section on "Statistics and Graphics."

Average Balance.—The average daily balance in a checking account. Computation is made monthly, the average for each customer being recorded in a card file.

Bailment.—A contract arising from the delivery of goods by one person to another for some specific purpose, the latter agreeing to return or to account for them.

Balance.—The excess of the sum of the items on one side of an account over the sum of the items on the other side. As between two persons it is the amount remaining due from one to the other after offsetting items are canceled.

Agents' balances are amounts due to or from representatives of various kinds, and consequently may be either assets or liabilities.

Balance of trade refers to excess of a country's imports over exports, or vice versa. The balance is **favorable** when exports exceed imports; **unfavorable** when imports exceed exports.

Cash balance is the excess of receipts over payments, taking into account cash on hand before transactions commence.

Reducing balance refers to a method of writing off depreciation whereby an equal percentage of the balance remaining is written off each year.

Balance Sheet.—A schedule of assets and liabilities so classified and arranged as to enable an intelligent study to be made of the important financial ratios existing between different classes of assets, between different classes of liabilities, and between assets and liabilities; also to enable one to observe the origin of the equity existing in the assets and to determine to whom it belongs.

Consolidated balance sheets are used to show the true status of corporations which, although legally distinct enterprises, are really united by common control through agency of intercompany ownership of stock.

Bankers' Acceptance.—A time draft drawn on a bank. The bank, in accordance with a previous arrangement, accepts it and returns it to the owner to be paid at maturity.

Bank Acceptance.—See "Acceptance."

Bankruptcy.—The act or process of becoming a bankrupt; also the status of one who, in accordance with bankruptcy law, has been judicially declared unable to pay his debts.

Bankrupts are **voluntary** and **involuntary,** the former being brought into the courts by their own voluntary action, the latter by action of creditors.

Barter.—A contract to exchange goods for goods instead of for money.

Batch.—A small group of deposit tickets and checks, or corresponding items, balanced as a unit.

Beneficiary.—One who has the profit, benefit, or advantage arising from a contract or an estate; also a *cestui que trust.*

Bequeath.—To make a gift of personal property by will.

Betterments.—Alteration of or additions to property which increase its earning power.

Bilateral Contract.—A contract where both the contracting parties are bound to fulfil obligations reciprocally towards each other.

Bill of Exchange.—A written order by one party to another directing him to pay a fixed sum of money at a specified time. A bill, to be negotiable under the Uniform Negotiable Instruments Law, must:

1. Be in writing and signed by maker or drawer.
2. Contain an unconditional promise or order to pay a sum certain in money.
3. Be payable on demand, or at a fixed or determinable future time.
4. Be payable to order or to bearer.
5. Have drawee's name indicated therein with reasonable certainty, where it is addressed to a drawee. See "Acceptance," "Draft."

Clean bills are without documents attached.

Documentary bills have papers attached showing how they are secured. These papers are usually a bill of lading, a policy of insurance, and invoice covering shipment of goods out of which the bill arises. Bills drawn against stocks or bonds are **security bills.**

Foreign bills are those payable in a state other than the state of origin.

Bill of Lading.—A receipt, usually in duplicate or triplicate, of goods received, given by the carrier to the shipper, and also a contract to carry the goods.

Bill of Sale.—A document given as security for a debt, transferring title to interest in personal property, which may be seized by the creditor in case of nonfulfilment by the debtor.

Bills Payable.—Comprise notes and drafts upon which a concern is primarily liable as maker or acceptor.

Bills Receivable.—Comprise notes and drafts owned and which therefore are listed as assets.

Block System.—A system under which the receiving teller's deposits are taken from him in small batches and balanced, also used to balance incoming mail remittances.

Blotter.—See Daybook under "Books of Account."

Bona Fide.—In good faith; honestly.

Bond.—A bond is a written promise under seal to pay a certain sum of money at a specified time. Bonds bear interest at a fixed rate, usually payable semiannually. Bonds may be sold either above or below par, in which case the **coupon rate** of interest differs from the **effective rate,** being lower than the effective rate when bonds are sold below par, and higher when bonds are sold above par.

Classification of bonds, according to Chamberlain, may be made on the four following bases:

1. According to character of issuing corporation.
2. According to character of security for bonds.
3. According to purpose or function of issue.
4. According to conditions attending payment of principal and interest.

According to character of issuing corporation, bonds fall into two great groups, viz.: **civil loans,** comprising both government and municipal bonds, and **corporation loans,** comprising transportation, public utility, industrial, and miscellaneous bonds.

According to character of security, bonds are either **simple** or **reinforced.** Simple obligations comprise civil loans and corporate debentures. Reinforced obligations have either guaranty or lien security. Guaranteed bonds are assumed or endorsed by some other than the issuing corporation. Lien bonds are secured on either personalty or realty. Security in form of personalty consists of stocks or bonds held as collateral, rolling stock, or funds. Security in form of realty consists of land, and various forms of improvements made on land.

According to purpose or function of issue, bonds fall into many varieties. The purpose is usually expressed in the title of the bond. Thus refunding bonds are those issued to secure funds with which to redeem an outstanding issue; school bonds are those issued to finance the construction and equipment of schools, etc.

According to conditions attending payment of principal and interest, bonds are of many varieties. As to interest, for example, bonds may be unconditional, or they may be income, adjustment, participating, etc. Also, they may be registered or coupon, high rate or low rate, high yield or low yield.

As to principal, bonds may be classified on the following bases:

1. Payment of principal.
2. Maturity of principal.

Bonds are frequently made payable in gold to prevent possible redemption in depreciated currency. Other bonds are payable in legal tender.

As to maturity, bonds are straight and serial, long-term and short-term, perpetual, etc.

Sometimes the date of maturity is optional with the payer, as in case of callable and redeemable bonds.

Sometimes the payee may exercise discretion regarding the maturity date, as in case of cash surrender bonds, bonds optional with payee, convertible bonds, etc.

Car trust certificates. See "Equipment bonds."

Collateral mortgage bonds are those having mortgage bonds as security.

Convertible bonds are those which, under prescribed conditions, may be exchanged for other securities of the issuing company.

Coupon bonds have attached coupons which, as interest payments become due, may be clipped and presented for payment.

Debenture bonds are those issued on the general credit of a corporation and so are not secured by mortgage.

Definitive bonds are permanent documents issued upon surrender of **interim bonds.** The latter are receipts issued to the purchaser to be held as evidence of ownership while the definitive bonds are being prepared, a process requiring several weeks.

Equipment bonds are an evolution from **car trust certificates.** Whereas **car trust certificates** are secured by deposit of the contract of lease, equip-

ment bonds are issued by the railroad company and are secured by lien on the contract of conditional sale. The trust deed, covering movable property, is a chattel mortgage, and also a conditional bill of sale. Being a conditional sale, the railroad company does not secure title to the equipment and consequently it is not affected by any blanket mortgage the company issues. Title passes to the company only upon fulfilment of the deferred payments.

First mortgage bonds are secured by a first mortgage. In case of insolvency their claim upon assets upon which they are a lien is prior to all other claims.

General mortgage bonds are secured by a mortgage but are preceded by senior issues.

Gold bonds are payable, usually both as to principal and interest, in gold.

Income bonds are those upon which interest is paid only when sufficient profits have been earned.

Junior bonds are those preceded by other bonds having a prior lien upon assets.

Mortgage bonds are secured by a mortgage on real estate.

Prior lien bonds are those having a lien superior to other issues, usually to all others.

Redeemable bonds are those which, at the option of the issuing corporation, are callable, usually at a premium, prior to date of maturity.

Registered bonds may be registered only as to principal, or as to both principal and interest. If registered only as to principal, they are transferred by assignment, but interest is paid upon coupons made payable to bearer. If registered also as to interest, checks are used to make interest payments.

Serial bonds mature in series, usually of equal or nearly equal amounts.

Bond and mortgage. When money is borrowed on security it is customary to give a note secured by a mortgage. The mortgage gives the creditor the right to enter foreclosure proceedings in case debtor fails to make payment, at the time specified, of either interest or principal.

Bond of indemnity. When a security is lost, the debtor corporation, upon issuing another to replace it, requires a guaranty, known as bond of indemnity, as protection against future presentation of the lost security.

Books of Account.—Books used for keeping a systematic record of transactions and influences affecting an enterprise. Books kept vary greatly with the size and nature of the business.

Passbook is used for making entry of deposits of cash in bank. Formerly it was customary to balance the passbook monthly, but **monthly statements** of account issued to the depositor now render this unnecessary in most instances.

Cash book contains a record of receipts and disbursements and shows balance on hand.

Daybook, or blotter, is used in single-entry bookkeeping to record transactions chronologically.

Journal is the book of original entry in double-entry bookkeeping. When the system becomes highly developed the journal, as such, disappears, its place being taken by more or less highly specialized sales and purchase books, cash books, etc. It is then customary to use a **general journal** to record only such transactions as cannot properly be entered in the more specialized books. Among these are various adjustment, transfer, and closing entries.

Cash journal is a combination cash book and journal, containing columns for both cash and non-cash transactions.

Purchases journal records purchases made and the names of persons credited therefor. By introducing columns an analysis of purchases may be made by classes of goods purchased and by departments to which they are to be charged.

Sales journal records sales and the names of persons charged therefor. Analysis columns may be introduced classifying sales according to types of goods and departments.

Notes receivable and **notes payable journals** are used when the number of these instruments is sufficient to make their use profitable. They may be used as memoranda, or be made an integral part of the accounting system, in which case postings therefrom are made direct to the ledger.

Voucher register is a columnar book employed to take the place of the purchase journal and accounts payable ledger by showing the distribution to accounts charged in the various columns.

Ledger is the book in which transactions are classified according to function. When subordinate ledgers are used the general ledger becomes a digest of details kept in subordinate ledgers as well as the record of all usual ledger accounts.

Accounts receivable ledger contains a record of all transactions affecting trade debtors.

Accounts payable ledger contains a record of all transactions affecting trade creditors.

Cost ledger contains a record of goods in process and shows the elements entering into cost of manufacture. It may also show raw material transactions and deliveries of finished goods. It is usually controlled by a special general ledger account.

Raw materials ledger contains a record of raw materials purchased, also of raw materials sent to manufacturing departments on requisition of foremen.

Finished goods ledger contains a record of finished product.

Private ledger is used to record only such accounts as it is desirable to keep secret from persons having access to the general ledger.

Petty cash book records payments of cash from the petty cash fund. Under the **imprest system** the amount disbursed as petty cash is refunded to petty cash by means of a check drawn to "Cash" and charged to the accounts for which such disbursements are made.

Boston ledger is of columnar type; in banking a double sheet usually contains a week's work. A column is used for each day; one account for every line.

Books of Record (Corporate).—Certain distinctive books of record are used by corporations. Their development has resulted from the methods of procedure followed by corporations. The chief ones are briefly described below:

Minute book records proceedings at meetings of stockholders and directors. Sometimes minutes of stockholders' and directors' meetings are kept in separate books. When but one book is used the minutes of stockholders' meetings may alternate with those of directors' meetings. In the first pages it is customary to bind in, or otherwise insert, a copy of the charter, leaving space for entering amendments thereto; next, beginning at the top of the right-hand page, the by-laws, leaving thereafter, several

blank pages for new by-laws or amendments of old ones; next, the minutes. Meetings of committees may also be recorded in minute books.

Subscription records are usually in form of loose sheets, adequately headed with explanatory matter, upon which the subscribers enter their names and addresses. The number of shares subscribed and the amount in dollars are set forth. If payments are to be made in instalments the conditions thereof should be set forth in the agreement. If both common and preferred stocks are to be sold, separate blanks should be provided for each kind of stock. Subscribers are not bound until their subscriptions are accepted by the corporation. To avoid revocation by subscribers a trustee may be appointed to act in behalf of the company, which, when organized, may bring suit to enforce payment. In New York a subscription contract is voidable unless 10% is paid down at time of subscribing.

Instalment receipts are issued to subscribers to stock as instalments fall due and are paid. Upon payment of all instalments and surrender of such receipts, the stock certificates are issued. In case **stock scrip** is used instead of certificates, a single instrument is arranged to permit endorsement on back of the certificate of all instalments paid.

Instalment book contains a list of subscribers, number of shares subscribed by each, amount of instalment due, with such information as is necessary relative to the particular instalment. A new page may be made out for each instalment, or, to avoid rewriting names each time an instalment falls due, the same list of names may be used by having groups of columns across the page, each group for one instalment. An alternative plan is to use short pages after the first. Essential columns are: a folio for posting to the stock ledger, columns for subscribers' names and addresses, number of shares, amount of instalment, when paid, amount received, cash book folio, and remarks. The instalment book is compiled from subscription sheets, and may be bound or loose-leaf.. This book is dispensed with when subscriptions are few, entry for instalments paid being made directly in the cash book.

When subscriptions are paid in full and permanent stock certificates are not ready for delivery, **receipts** or **temporary certificates** are issued. These are turned in and canceled when permanent certificates are delivered.

Stock certificate books usually contain from 100 to 500 certificates, each one attached to a stub. Separate books are ordinarily used for common and preferred stock. When certificates are returned for cancellation and issue of new ones, those canceled are pasted to the original stubs.

Stock certificates vary as to size, form, and wording. Each certificate should show the corporate name, state of incorporation, total number of shares, number of shares represented by the certificate, and whether it is full-paid. Certificates should be numbered consecutively and issued in that order. Each certificate has an **assignment form** printed on the back. When the owner wishes to surrender title he usually signs in blank, thus making the certificate transferable by delivery. Legal title, however, remains in the former owner until transfer is made on the corporation's books.

A **split** consists in having a stock certificate canceled and two more issued for the same aggregate number of shares as were represented by the original certificate; or when two or more certificates are surrendered and one is issued in their place.

Stock transfer book is employed to authorize and record transfers of shares of stock. It is a duplication of the assignment form found on the

back of certificates. For this reason some corporations do not use it. Usually there are from two to six transfer forms on each page. The transfer book is closed a number of days before annual meetings and before days when dividends are paid, to permit preparation of lists of stockholders' names and addresses.

A **register of transfers** is sometimes employed to supplement the stock transfer book, serving as a medium for posting to the stock ledger. It is used only by large concerns having many transfers to make. Where transfers are few, postings are made from the transfer book, or sometimes direct from the stock certificate book.

Many large corporations select trust companies to act as transfer agents. The proper official of the trust company countersigns all certificates after they are signed by the proper official of the issuing corporation, usually president or treasurer. The following is a form of countersignature:

Countersigned this 23rd day of October, 19—.
The Eastern Trust Company of Philadelphia,
Transfer Agent.
By T. H. Hatter,
Auditor.

Stock ledger is required by law. It shows stock acquired, transferred, and held by each stockholder. It serves as legal evidence of stock ownership. Postings to this book are made from the stock certificate in case of original issues. Transfers are posted from the transfer book, transfer register, or stock certificate book, to the stock ledger. Where both preferred and common stocks are outstanding, either separate stock ledgers or separate divisions of the same book should be used. The stock ledger is controlled by the Capital Stock account in the general ledger. The alphabetical arrangement is usually required in the stock ledger.

Bond register is employed to keep a record of registered bonds. Space is provided for bondholder's name and address, bond number, date of purchase, from whom transferred, and, if the bond is registered as to interest, twice as many columns for interest payments as the bond has years to run.

Coupon register is used as a receptacle for paid coupons. Ordinarily one page is provided for each bond and divided into spaces equal in number to the number of coupons, these spaces being consecutively numbered to correspond with the numbers of the coupons. When the coupons are returned they are pasted over their corresponding numbers in the register.

Bottomry.—A species of mortgage on a ship, by which it is pledged as security for the repayment of a sum of money. If the ship is totally lost, the lender loses his money; but if the ship returns safely, he recovers his principal together with the interest agreed on, which is usually at a high rate corresponding to the risk. The contract may be by a bottomry bill, or bond. The owner or master of the vessel does not make himself personally responsible in case of loss.

Boycott.—To combine to abstain from or prevent social or business relations with a trades person, landlord, etc.

Breach of Covenant.—A violation of some agreement in a deed.

Brokerage.—Commission allowed to brokers for buying or selling property.

Budget.—A forecast of income and expenditures based on departmental estimates for a definite period, as a year or a month. Its successful application involves coordination of all activities and preparation of

reports showing to what extent actual results secured agree with estimates; also, such revision of original plans as these reports show to be necessary.

Burden.—Elements of cost of production which, not being directly allocable to output, must be distributed on more or less arbitrary basis.

General burden applies to plant as a whole and is distributed to departments on an arbitrary basis.

Departmental burden originates from costs definitely assignable to given departments. This, plus a department's proportion of general overhead, is total overhead to be distributed to work in process within the department.

Burden is sometimes termed **overhead, indirect expense,** or **oncost.**

Burglary.—A breaking or entering of a dwelling in the night-time with the intent to commit a felony.

By-Laws.—Regulations adopted by stockholders governing the routine activities of directors and officers of a corporation. A set of by-laws is usually adopted at the first stockholders' meeting. Directors do not have power to make by-laws unless specially authorized by the stockholders. By-laws may regulate the relationships of the corporation with outsiders if the latter know of their provisions and act accordingly. Associations and societies also adopt by-laws.

By-Products.—Materials of marketable value resulting from manufacturing processes but forming no part of the main output.

Cable Transfer.—A code cablegram sent by a bank to its correspondent abroad, directing the correspondent to pay an amount to the party named and charge its account.

Capital.—In the accounting sense, capital is excess of assets over liabilities of a given enterprise. Sometimes the term is used in the sense of wealth employed in a productive undertaking, which ordinarily is equivalent to the sum of the assets. The concepts of wealth and capital correspond when the balance sheets of all persons are taken into consideration, because all debts cancel, leaving assets (productive wealth) and capital equivalent.

Fixed capital consists of wealth in form of land, buildings, machinery, furniture and fixtures, etc. The distinguishing feature of fixed capital is that profit is ordinarily derived not from its sale but from its use.

Floating capital is capital which can be readily converted into cash.

Nominal capital is the authorized capital stock of a corporation.

Paid-up capital is the amount of capital stock issued and full paid.

Working capital is the excess of current assets over current liabilities. This excess is the amount left free for use within the business for purchasing merchandise, supplies, and so on, and meeting all current expenses incident to production. Ratio of current assets to current liabilities is an index of the condition of solvency of an enterprise, as well as a relative measure of working capital.

In speaking of **banks,** capital always means paid-in par value of capital stock outstanding, without regard to surplus or undivided profits.

Capital Account.—See "Account."

Capital Stock.—See "Stock."

Card of Accounts.—A classified list of all ledger accounts used in any given accounting system, usually accompanied with explanations regarding entries to particular accounts.

Cargo.—The entire load of a vessel excluding passengers.

Cash.—All forms of media of exchange which by custom are received in settlement of debts.

Petty cash is a special fund used to make small payments where checks are for some reason undesirable. See "Imprest System."

In banking, cash may mean actual circulating medium only ("in vault" often added in this case), or may include cash items and checks due on sight from other banks.

Cash letter.—Form letter of transmittal on which is listed a group of checks being mailed to out-of-town point for collection. Also called **transit letter** or **remittance.**

Cashier.—The member of a bank's executive staff officially responsible for the custody of cash and other securities. In general, anyone who receives or pays out money.

Cashier's Check.—A draft, signed by the cashier or other appropriate officer, drawn by the bank on itself.

Causa Mortis.—A gift made in prospect of death, and revocable any time before death. A gift causa mortis fails if donor does not die from the expected cause.

Caveat Emptor.—Let the buyer beware; **caveat venditor,** let the seller beware; **caveat viator,** let the traveler beware.

Cede.—To assign or transfer.

Certificate.—Written or printed evidence of property rights, or of assurance that certain things have been done, as in case of an auditor's certificate.

Auditor's certificates are signed statements setting forth briefly the status of the accounts which have been the subject of audit. If **qualified,** they place some form of limitation upon the auditor's responsibility.

Interim bond certificates are temporary bonds issued to purchasers of bonds pending preparation of definitive forms.

Certificate of deposit is a standardized certificate or receipt issued by a bank showing that a stated sum has been left on deposit. It may be payable either on demand or after a certain time, according to terms of certificate issued. Time certificates of deposit customarily bear interest.

Receiver's certificates are notes issued by a receiver at the order of a court to secure funds to enable him to continue the operations of a public utility, discontinuance of which would be contrary to public policy. Such instruments rank ahead of all other obligations of the borrowing corporation.

Stock certificates are formal evidences of ownership of shares of stock in a corporation.

Cestui Que Trust.—The person to whom the benefits of an estate held in trust accrue; a beneficiary.

Charges.—Items debited in accounts.

Deferred charges are expenditures made to promote operations but which are not to be carried to profit and loss in the current period. Ordinarily they are distributed over from 1 to 5 years, depending on the nature of the expenses. See also "Prepaid Expense."

Fixed charges are those not dependent upon operations, but must be met regardless of quantity of business transacted. Interest on bonded indebtedness is an illustration.

Charter.—An instrument issued by a governmental authority evidencing the creation and existence of a corporation, as well as the privileges and rights which such corporation possesses.

Charter Party.—A written contract by which the owner of a ship hires it out to another party for a specified time.

Chattels.—Personal property and real property, i.e., leases and interests

inland which are less than a freehold. **Chattels personal** are movable personal property and not permanently attached to realty.

Check.—A form of demand negotiable instrument wherein the maker is a depositor in a bank and the drawee is the bank. Checks are made payable to a person named to his order, or to bearer.

Cashier's checks are drawn by banks against themselves.

Certified checks are ordinary checks which have been "certified" by the cashier of the bank against which they are drawn. Such certification makes the bank primarily liable upon the check and discharges the drawer. If the drawer secures certification of his own check he remains secondarily liable if the bank becomes insolvent.

Voucher checks contain detailed statements of obligations liquidated, so that acceptance thereof is acknowledgment of their discharge, and the payee is estopped from applying them against other obligations.

Clearing Account.—See "Account."

Chose in Action.—The right to a debt, or money or personal property recoverable in a suit at law. Also applies to the written obligation upon which suit may be begun.

Circulation.—Notes payable which a national bank has circulating as money.

Citation.—A summons to appear before a court to do something specifically mentioned or show cause why it should not be done.

Clearing House.—An organization which primarily controls a meeting place where messengers from different banks may come together and exchange checks drawn on each other's institutions, an individual bank only paying or receiving the net difference between the total amount of checks which all other banks hold against it and the total amount of checks which it holds drawn on other banks. Out of these meetings have grown organizations which, in many cases, regulate interest rates, prescribe service charges, and examine member banks.

Codicil.—An additional clause added to a will after the will has been signed, sealed, and witnessed. It must be signed and witnessed as formally as the will.

Collateral Security.—Personal property transferred by the owner to another to secure the carrying out of an obligation.

Compos Mentis.—Sound of mind or capable of doing acts.

Composition.—An agreement among creditors to accept partial payment of the debts of a party in satisfaction of their full amount.

Conflict of Laws.—The difference and variations of laws as between states or countries in regard to the subject matter of some case. Also applies in case of different laws of the same state.

Consanguinity.—The relationship of persons descended from a common ancestor.

Consignee.—An agent who receives shipments of goods from his principal to be sold on commission basis, title to goods remaining in the principal, or consignor.

A merchant whose chief business consists in receiving such consignments is a **factor.** His commission is sometimes termed **factorage.**

Consignment.—A shipment of goods to another and held by him for account of the principal or consignor.

Consignor.—One who ships goods to an agent or factor who holds them for account of the consignor or principal.

Consolidated Statement.—See "Statement."

Consolidation.—Unification or affiliation of enterprises engaged in competitive or supplementary undertakings.

Consummation.—The completion or finish of some act.

Contingent.—That which depends upon some happening or occurrence; doubtful, conditional.

Contract.—An agreement between parties, for consideration, to do or to refrain from doing a specified thing or things. To constitute an agreement the minds of the parties must meet. To render the contract legally enforcible,

1. Parties to the agreement must be legally competent to contract.
2. The thing to be done must be lawful.
3. The agreement must be concerning the same thing.
4. The consideration must be sufficient.

Controlling Account.—See "Account."

Conversion.—The wrongful taking or using of property belonging to another.

Convertible.—See "Bond."

Corporation.—Corporations are artificial persons created by law to carry out a certain purpose or purposes.

Public corporations, sometimes termed **municipal corporations,** are those formed by communitites for governmental purposes, as, cities and counties.

Private corporations comprise all other than public corporations.

Close corporations are those whose stock is held by a comparatively few persons and which is seldom or never publicly traded in.

Public service corporations, also known as public utilities, are those engaged in supplying for public consumption such services as lighting, power, and transportation. Being monopolistic in character, they are usually subject to commission control as to capitalization, rates, etc.

Corporeal.—A material thing.

Correspondent.—In banking, another bank with which deposit relations are maintained, a balance being due to or from it. Also, a bank with which arrangements are made to handle collections or similar business.

Cost.—Cost is the outlay, usually measured in terms of money, necessary to buy or to produce a commodity. The two elements of cost are prime cost and overhead, or burden.

Prime cost is outlay on direct labor and raw materials necessary to produce a commodity.

Burden includes all other elements of cost than direct labor and raw materials.

Cost Accounting.—Determination, by means of the application of accounting principles, of the elements of cost entering into the production of a commodity or a service.

Counterfoil.—That part of a document which remains as a record of the contents of the main instrument after the latter has been removed or detached.

Countersign.—Placing an additional signature upon a document for purposes of identification or authenticity.

Country Bank.—Any bank located outside a reserve city.

Coupon.—Certificates attached to a bond each containing a promise to pay to bearer the amount of interest on said bond falling due at the date specified.

Creditor.—One owning wealth in the form of obligations of others to pay him.

A secured creditor is one who holds a lien on specific property for the full or partial payment of a debt owing to him.

A preferential creditor is one who has a claim on the assets of a debtor prior to that of other creditors.

Currency.—Money and bank deposits.

Curtesy.—The husband's estate in the wife's property after her death.

Dating.—The extending of credit beyond the date for which it is ostensibly granted.

In **forward dating** the invoice is dated ahead of the date of sale. Date for payment is reckoned from the forward date. Forward dating is sometimes termed **postdating.**

Days of Grace.—Three days beyond the maturity of notes during which payment cannot be enforced. Days of grace have been abolished in most states.

De Bonis Non.—An administrator *de bonis non* is one who takes charge of any property not executed or settled by a previous administrator whose place he is taking.

Dead Freight.—The part left empty in a ship chartered by a person who has cargo enough for only a part of the ship. In general, any unused but paid for freight space.

Debenture.—See "Bond."

Debt.—An obligation to pay money or that which one owes to another.

Bad debts are those which cannot be collected because of insolvency of the debtors.

Contingent debts are those for which actual reponsibility depends on future uncertainties.

Doubtful debts are those past due but not yet ascertained to be uncollectible.

Floating debts are those not represented by bonds.

Funded debts are those represented by long-term bonds which usually pledge certain property for the payment of interest and principal.

Judgment debts are those which have been affirmed as lawful by a court.

Debtor.—One who owes money.

Decree.—The order made by a court of equity.

Deed.—A formal document employed to transfer title to real estate.

Quitclaim deed transfers only the interests of the immediate grantors.

Trust deeds are documents conveying titles to one party, usually a trust company, known as the trustee, for security of creditors of the grantor.

Defalcation.—Fraudulent conversion of funds.

Deferred Asset or Charge.—See "Prepaid Expense."

Deferred Credit, Income, or Liability.—See "Prepaid Income."

Deficiency.—Insufficiency of assets to discharge debts or other obligations.

Deficiency Account.—See "Account."

Del Credere.—See "Agent."

Delivery.—The act of transferring property or value of any kind from one to another.

Demurrage.—The act of detaining a ship or freight car; also, charge made by the carrier for detention longer than the period agreed upon.

Deposit.—Obligation of a bank to a customer, in form of a book credit, given in exchange for cash or its equivalent, or as a loan, or as consideration in a purchase of some form of wealth.

Demand deposits are those subject to payment without notice.

Time deposits are those payable after expiration of a specified period of time. The Federal Reserve Act places under head of time deposits those payable after 30 days, savings accounts and certificates of deposit subject to not less than 30 days' notice, and all postal savings deposits.

Depreciation.—Decline in value of assets resulting from one or more of the following:

1. Wear and tear.
2. Tenure of holding.
3. Permanency or steadiness of industry.
4. Exhaustion of raw materials.
5. Obsolescence.
6. Accidents.
7. Fluctuations in trade.
8. Inadequacy.

Depreciation Reserve Account.—See "Account."

Devise.—Usually a gift of real property by will; also used sometimes for personal property.

Diminishing Returns, Law of.—The tendency of production costs to increase with increased application of labor and capital. It applies to land cultivation, extraction of ores, etc., but not to manufactures. Sometimes called the **law of increasing cost.** Great advance in methods may delay temporarily the operation of the law.

Direct Line.—The amount a bank loans or will loan to an individual or a business.

Disbursement.—A cash payment. The word is customarily used with reference to cash payments over a period, as one month, or one year.

Discharge.—The order of a court releasing a bankrupt from his debts. More generally, it refers to any debt or obligation.

Disclaimer.—A formal instrument made by a patentee renouncing part of his patent.

Discount.—Deduction from a listed or named figure, usually computed on a percentage basis.

Bank discount is a deduction from the face amount of a loan as an interest charge, made when the loan is granted.

Bond discount is the difference between the par value of bonds and the sum for which they are sold, when this sum is less than the par value.

Cash discount is a deduction from the invoice price allowed to encourage prompt payment. It is composed of two factors, interest and bad debts expense, and should be shown in the administrative section of the profit and loss account, although some authorities place it in the trading section.

Commercial discount is a deduction allowed by merchants to customers for the prepayment of notes.

Trade discount is a deduction from a list price made, (a) to avoid frequent changes in catalog prices, and (b) to secure partial secrecy regarding actual quotations. The key to the actual price is the discount or series of discounts allowed from the list price.

True discount is the difference between the present worth and the amount of a note, the present worth being that amount which, at interest for the given time at the given rate, will accumulate to the amount of the note.

Discount Account.—See "Account."

Dividend.—Ordinarily, division of profits among stockholders on a pro rata basis.

Cumulative dividends are those which, if unpaid in any year owing to insufficient profits, become a lien on future profits.

Ex-dividend refers to the sale of stock shares after the date when books are closed to transfers of stock so that names and addresses of stockholders of record, to whom dividend checks are to be mailed, may be compiled. The seller of stock **ex-dividend** receives the dividend because he is the stockholder of record when the dividend checks are made out.

Extra dividends are those declared in addition to regular dividends.

Liquidating dividends are those paid to the creditors or owners of a business being wound up. They represent distribution of capital and ordinarily are made whenever a sufficient amount of assets is converted into cash to warrant making a disbursement.

Passed dividends are those remaining unpaid because the directors for some reason fail to vote affirmatively at the time the question of continuing dividend payments is considered.

Scrip dividends are those paid in promissory notes which usually bear interest and fall due on a specified date or after the occurrence of a specified event. Sometimes the notes are made convertible into the issuing company's stock. Sometimes they are made transferable by assignment.

Stock dividends are those paid in capital stock newly issued, the charge being to Surplus account. They are not a distribution of profits but a modification of the divisions of net worth or proprietorship.

Dividend orders are specific instructions from stockholders stating to whom dividends shall be paid.

Dividend Account.—See "Account."

Dollar Acceptance.—See "Acceptance."

Donation Account.—See "Account."

Dower.—That portion of the interest in real estate of a deceased husband which the law gives for life to his widow.

Draft.—A draft or bill of exchange is defined in §126 of the Uniform Negotiable Instruments Law as "an unconditional order in writing addressed by one person to another, signed by the person giving it, requiring the person to whom it is addressed to pay on demand or at a fixed or determinable future time a certain sum in money to order or to bearer."

A draft drawn and payable within a state is an **inland bill.** All others are **foreign bills.**

When a draft is accepted it becomes an **acceptance.**

A **sight draft** is one payable on presentation.

A **documentary draft** is one which has a warehouse receipt, bill of lading, or other paper attached, which is delivered to drawee upon payment.

A **clean draft** is one which has no documents, such as bills of lading or warehouse receipts, attached.

Drawback.—The return of part of an amount paid; more specifically, return of duty paid on imports being exported in one form or another.

Drawee.—The person against whom a draft is drawn and who becomes primarily liable upon acceptance.

Drawer.—The maker of a draft or bill of exchange.

Drawing Account.—See "Account."

Due Date.—Date of maturity of an obligation.

The **average due date** is the date when a single settlement of a number of items falling due at different dates can be made equitably.

Duress.—The forcing of a person by words or acts to perform some act.

Earnings.—Gross revenues from operations. Sometimes termed **gross earnings.**

Net earnings are determined by deducting operating expenses from gross revenues from operations.

Easement.—Right of way over another's land, air, light, water, and support, given by the owner.

Economics.—The science which treats of the production, distribution and consumption of wealth.

Embezzlement.—Fraudulent conversion or appropriation of another's wealth by one to whose care and control it is entrusted.

Emblements.—Growing crops. It applies only to crops raised each year or those cared for by a tenant.

Eminent Domain.—A right which the government has over the real property of individuals to take it for some public use, paying for it reasonable value.

Encumbrance.—Any liability attached to property, as a judgment, mortgage, etc.

Entrepreneur.—One who undertakes business ventures in order to secure large profits. Sometimes called **enterpriser** or **undertaker.**

Entry.—Written description of a business transaction or adjustment made in books of account.

Closing entries are those made as of the last day of a fiscal period to ascertain profit or loss and to convert the final trial balance into the balance sheet.

Opening entries are those made in books of account to set up asset, liability, and proprietorship accounts according to an adopted classification and accompanied by all necessary information regarding the origin and purposes of the business under consideration.

Original entries are those made as soon as possible after the consummation of a transaction for the purpose of securing a written record thereof. Such entries are usually made in a **journal** or **daybook,** and are of special importance as records in case of litigation.

Error.—A mistake.

Errors of commission arise from recording transactions incorrectly.

Errors of omission arise from failure to record on the books a transaction which forms part of current operations.

Errors of principle arise from a wrong conception of the treatment required for a given item, as when an item of expense is charged to an asset account.

Offsetting errors are those which counterbalance each other, thus making detection difficult.

Escrow.—A sealed instrument given by one party to another to deliver to a third person when that third person performs a certain act or acts. It is not in force until delivered to that third party.

Estate.—A right of ownership in property.

Estate in fee simple is the ownership of property outright.

Estate for life is the right to property for the life of the owner or for that of another person.

Estate in remainder is one which, upon expiration of a life estate, passes to a person other than the original owner.

Estate in reversion is one which, upon expiration of a life estate, goes back to the original owner.

Estate in trust is one held and managed by a trustee for the benefit of the real owner.

Estate Accounts.—See "Account."

Estoppel.—A legal bar to alleging or denying any fact because of one's previous action by which the contrary has been admitted or implied.

Exchange.—Reciprocal transfer of values.

Foreign exchange is the conversion of money of one country into that of another to facilitate payment in the latter country.

Par of exchange is the point at which moneys of two countries exchange on a basis of equality with reference to the amount of gold represented.

Rate of exchange is amount of currency of one country which exchanges for a given amount of currency of another country at a given moment. The rate is favorable or unfavorable according as the rate offered for bills on foreign countries is high or low.

In banking exchange is money on deposit in other banks which may be drawn upon at sight; also income received from selling drafts on such accounts.

Executor.—One appointed by the terms of a will to carry out the provisions of that will.

Executory Contract.—One which has not yet been completed or which requires something to be done or to happen before it will be executed.

Expenditure.—An outlay of wealth, in form of cash disbursed or debts incurred.

Expense.—An expenditure whose benefits have already been, or will shortly be, absorbed in services performed or goods manufactured. The term is relative, for in a broad sense all expenditures are expense.

Accrued Expenses.—See "Accrued Expense."

Deferred Expenses are those temporarily capitalized by being carried as assets. The expression is loosely employed to refer to both prepaid expenses which represent present value and to those which represent only expired value but which for some reason are not to be charged off currently. See also "Prepaid Expense."

Direct expenses, in industry, are those which can be charged direct to specific orders in process without intervention of any arbitrary plan of allocation.

Indirect expenses are those which cannot be charged direct to specific orders in process but must first be charged to clearing accounts and in turn allocated to orders in process on some arbitrary basis.

Extinguishment.—The destruction of a right by satisfaction or by the acquisition of another right which is of equal or greater value.

Factor.—An agent employed to sell merchandise, delivered to him by the principal for a compensation called a "factorage" or "commission."

False Pretenses.—A statement which is not true, made for the purpose of selling goods, obtaining money, etc.

Fee.—An estate of inheritance. It is divided into three kinds: (1) **fee simple**, an absolute estate of inheritance; (2) **qualified or limited estate**; and (3), **fee tail,** an inherited estate limited to one person and the heirs of his body.

Felony.—Any crime greater than a misdemeanor which may be punishable by death or penal servitude.

Fiduciary.—A trustee.

Fiduciary relationships are those which arise between a trustee and a **cestui que trust.**

Fiscal Agent.—A bank which handles disbursements and, to a lesser extent, receives money as an agent for a large organization, such as a state government or a corporation. Paying coupons is a common duty.

Fixed Asset.—See "Asset."

Fixture.—An article of personal property, which through annexation to land or building becomes real property.

Flotsam or Floatsam.—Goods thrown overboard, which float. Ownership of such property is not lost but is liable for salvage.

Foreclosure.—An equitable proceeding by which a mortgagor is banned from the redemption of his property and thereby loses it forever.

Forgery.—The false making or alteration of an instrument, which purports on the face of it to be good for the purposes for which it was created; the false or unauthorized signature of a document with a design to defraud.

Franchise.—A privilege or liberty given by the government to certain individuals.

Fraud.—False representation made by a person who knows it to be false, or has no positive knowledge in the matter, intending to induce action and to create a false impression in another party's mind, or to prevent him from investigating to find out the truth about the transaction.

Fund.—See "Sinking Fund," "Reserve Fund," "Trust Fund."

Garnishee.—A person warned, at the suit of a creditor plaintiff, not to pay money which he owes to, or to deliver over property which belongs to, the defendant, because the defendant is indebted to the plaintiff.

General Average.—Where a loss has been incurred intentionally for the benefit of all on board, the owners of the ship and all having cargo thereon contribute proportionately toward making good the loss.

Good-Will.—Present right to receive expected future superprofits, superprofits being the amount by which future profits are expected to exceed all economic expenditure incident to its production. See section on "Good-Will."

Guaranty or Guarantee.—A promise to another that the promisor will be responsible for the payment of a certain sum if the other cannot collect it from the debtor.

Guardian.—One controlling the person and property of another who is incapable of managing his affairs for himself, as an infant or an insane person.

Hedging.—Speculation so arranged that if one loses in his regular business he wins in the speculation, or if he gains in his regular business he loses in the speculation. It usually consists in purchasing against a sale or selling against a purchase, and is entered into to protect one in another transaction.

Heir.—One who succeeds by descent to an estate in land or would have succeeded had his ancestor died intestate.

Hereditaments.—Every sort of inheritable property, such as corporeal, incorporeal, real, personal, and mixed.

Holder in Due Course.—The Uniform Negotiable Instruments Law (§52) says that a holder in due course is one who takes the instrument under the following conditions:

1. That it is complete and regular upon its face.
2. That he became the holder of it before it was overdue, and without

notice that it had been previously dishonored, if such were the fact.

3. That he took it in good faith and for value.
4. That at the time it was negotiated to him he had no notice of any infirmity in the instrument or defect in the title of the person negotiating it.

Holograph.—A will or other instrument written entirely in the handwriting of the maker of the will or other instrument.

Hush-Money.—Money given as a bribe to keep another from giving some certain information.

Hypothecate.—To pledge property as security.

Impersonal Account.—See "Account."

Imprest System.—Plan used to account for petty cash disbursements in accordance with which the cashier is at intervals reimbursed for the amount disbursed by him by means of a check drawn to "Cash" and charged to the accounts against which such disbursements were made.

Inadequacy.—Loss in value resulting from the inability of facilities to meet the demands made upon them.

Incendiary.—A person who wilfully sets fire to a building.

Income.—A flow of benefits from wealth over a period of time.

Gross operating income includes total revenues from operations without deduction for costs of securing it.

Net operating income is the excess of gross operating income over costs of securing it.

Non-operating income is that derived from sources other than primary operations.

Accrued income. See "Accrued Income."

Prepaid income. See "Prepaid Income."

Incorporeal.—That which is not material; intangible; unable to be handled, seen, or heard; invisible.

Indenture.—A deed between two or more parties.

Index number.—Index numbers are averages employed to express movements of prices, wages, etc., over a period of time.

Indorsement.—Writing one's name across the back of a note or check. The effect is to warrant to subsequent holders in due course that:

1. The instrument is genuine.
2. The indorser has good title to it.
3. All prior parties had capacity to contract.
4. The instrument, at time of indorsement, is valid and subsisting.

A **special indorsement** specifies the person to whom, or to whose order, the instrument is payable.

An **indorsement in blank** specifies no indorsee, so that the instrument is then negotiable by delivery.

A **restrictive indorsement** is one which prohibits further negotiation, constitutes the indorsee the agent of the indorser, or vests title in the indorsee in trust for or to the use of some other person.

A **qualified indorsement** constitutes the indorser merely an assignor of title to the instruments. For this purpose the words "without recourse" are commonly used.

A **conditional indorsement** imposes some condition on payment, as,

"Pay to John Jones, upon delivery of 10 bu. wheat, on July 5, 19—. Joe Roe."

Ingress.—The right of the lessee to enter, to go upon the land which he has leased.

Injunction.—An order from a court forbidding the performance of a certain act or acts.

Insolvency.—Inability to pay debts due.

Insurance.—See "Policy."

Interest.—Expense or income resulting from use of wealth over a period of time.

Simple interest is computed on the principal only.

Compound interest is interest on a principal sum increased periodically by the addition of interest.

Effective interest rate is that figured on the actual selling price of the bond, allowing for amortization of premium or discount.

Nominal interest rate is that figured on the par value of the bond.

Interim Certificate.—See "Receipt, temporary."

Interior Clearing House.—The proof desk; or department of a bank which collects all items from the cages and balances them, charging checks and items deposited to various departments.

Inventory.—An itemized list of goods giving amounts and prices.

A **book inventory** is a running record of the acquisition of additions to, and subtractions from, assets of a certain class, kept in terms of quantities and prices or either. Such record is usually made a part of the double-entry system.

Investigation.—A study undertaken in connection with the sale of an enterprise to secure information relative to its financial affairs, alleged fraudulent transactions, profits derived from infringements, and so on.

Invoice.—A statement issued by a seller of goods to the purchaser giving details regarding quantities, prices, and terms of payment.

Jetsam.—Jetsam is where goods are cast into the sea, and then sink and remain under water.

Jettison.—The throwing of part of a cargo overboard in order to lighten the ship.

Joint-Stock Company.—An unincorporated association having articles of association as well as a capital stock under a form of organization similar to that of a corporation and possessing some of the powers of a corporation, but is not in fact a corporation.

Joint-Tenants.—The owning by two or more persons of a piece of property; upon the death of one the share owned by him passes to the survivor or survivors.

Journal.—See "Books of Account."

Judgment Debtor.—One against whom a judgment of the court ordering him to pay his debt is unsatisfied.

Justice of the Peace.—A justice of the peace is a judicial officer of an inferior local court with jurisdiction in civil cases where the amounts involved are small and in criminal cases of misdemeanors and petty crimes.

Labor.—Cost of help other than administrative and clerical.

Direct labor is that which can be charged to an order without being allocated on an arbitrary basis. See "Expense."

Indirect labor is that which cannot be charged directly to an order or process.

Larceny.—Stealing personal property.

Law.—A rule of action prescribed by supreme authority commanding that which is legally right and prohibiting that which is legally wrong.

Written law is embodied in constitutions, acts of Congress, state legislatures, and other bodies having legislative authority.

Unwritten law is custom which has become recognized by courts as rules of action.

Common law is the unwritten law, as distinguished from statutory law, as developed in England, being based on custom and usage as reflected in court decisions.

Civil law is the old Roman law which has been made the foundation of the jurisprudence of the governments of continental Europe, also of the State of Louisiana.

Commercial law is that part of substantive law which governs business relationships.

Lease.—A conveyance, given usually in exchange for rent, of the right of possession of certain property for a certain period.

Ledger.—See "Books of Account."

Legacy.—A gift of personal property made by will.

Lessee.—Party to a lease who secures the right to use of property during the term specified.

Lessor.—Party to a lease who surrenders the right to use of property during the term specified.

Letter of Credit—(Commercial).—Instrument issued by a bank upon a purchaser's request in accordance with which it agrees to pay a seller's draft if drawn at sight, or to accept it if it is a time draft. Purchaser, under separate contract, agrees to reimburse the bank.

Letter of Credit (Travelers).—A document issued by a bank enabling a traveler to identify himself, by means of his signature, at places where he is not personally known, and thus to secure funds up to the amount authorized.

Letters Testamentary.—An instrument given by a court to a person named as executor in a will to proceed with administration of the estate.

Lex Loci.—The law of the place where a contract is made or an act performed.

Liability.—A debt.

Capital liabilities are those which are incurred in the acquisition of permanent assets, and which are usually in form of bonded indebtedness having a maturity date removed, say, more than one year.

Current liabilities are those which will fall due within a comparatively brief period, say not over 6 months or a year.

Contingent liabilities are those which may or may not become definite obligations, depending upon some event.

Deferred liabilities are income received but not yet due. See "Prepaid Income."

Fixed liabilities are those in form of bonds or long-term notes.

Lien.—The right of a person to property belonging to another until that other pays what is due.

Liquidated Damages.—Damages which parties to a contract agree shall be paid in case of a breach of contract.

Lis Pendens.—A suit or action that is pending.

Locus Sigilli.—The place of the seal.

Maintenance.—Costs of upkeep.

Mandamus.—"We command." An order by court to some person sole, or corporate, to do some specified act.

Mandate.—A judicial order.

Manifest.—Invoice of a ship's cargo giving names of parties to whom shipments are made.

Material.—A general term employed to describe whatever commodities or goods are used in manufacture.

Direct material becomes an integral part of the manufactured product.

Indirect material does not become an integral part of the product manufactured. It includes supplies, small tools, etc.

Raw material is the unconsumed portion of material, to be distinguished from **material in process,** which is that material which has already undergone some essential process.

Member bank.—A national or state bank belonging to the federal reserve system.

Mercantile law.—The law which deals with matters pertaining to trade affairs.

Merchandise Account.—See "Account."

Merger.—Unification of two or more concerns in which the legal entities of the original enterprises disappear.

Misappropriation.—Embezzlement.

Misdemeanor.—A breach of criminal law less than a felony.

Mistake.—In contracts two kinds of mistakes are possible.

Mistake of fact, i.e., as to whom one contracts with, as to subject matter, or as to what is to be performed. A mistake of fact renders the contract void.

Mistake of law, i.e., as to the quality or value of the subject dealt with. A mistake of law does not void a contract.

Mitigation.—The lessening of damages or of punishment.

Money.—Wealth which is generally acceptable in exchange.

Real money is that which a payee accepts without question because it is **legal tender,** i.e., may be legally tendered in payment of debts, or because it has become the custom to accept it.

Primary money is real money which has the same value as a commodity as it has as money. e.g., gold in a gold standard country.

Fiduciary money is real money whose value depends partly or wholly on the owner's confidence that it can be readily exchanged for primary money. Sometimes termed representative money. Example: paper money.

Fiat money is money not convertible into primary money.

Mortgage.—An instrument, in form like a deed, assigning real estate to one who loans money, but providing that upon repayment thereof when due, the assignment becomes null and void.

Deeds of trust are mortgages given by deed in trust to a third party as trustee.

Purchase money mortgages are those given for part or the whole of the purchase price of land.

Building and loan mortgages are those given to secure funds to erect a building.

Chattel mortgages are sales of chattel under condition that if a debt or other obligation is paid by the party who makes the mortgage, the

sale shall be void and the title shall return to the party who made the mortgage.

Closed mortgages are those under which no additional indebtedness can be incurred.

Open mortgages are those under which additional indebtedness can be incurred.

Mortgagee.—The one who loans money under a mortgage and therefore holds the mortgage.

Mortgagor.—The one who borrows money under a mortgage.

A **release of mortgage** is a formal paper recorded in the same way as are mortgages indicating that the obligation is discharged and the property again unencumbered.

Negotiable Instrument.—Under the Uniform Negotiable Instruments Law an instrument, to be negotiable, must,

1. Be in writing and signed by the maker or drawer.
2. Contain an unconditional promise or order to pay a sum certain in money.
3. Be payable on demand, or at a fixed or determinable future time.
4. Be payable to order or to bearer.
5. Where the instrument is addressed to a drawee, he must be named or otherwise indicated therein with reasonable certainty.

Next of Kin.—"Those related by blood who would take personal estate of one who dies intestate" (Joseph's Surrogate Practice, page 96). First, children, and then descendants; second, father; third, mother and brothers and sisters; and fourth, collateral relatives.

Nominal Account.—See "Account."

Nominal Damages.—The smallest degree of damages awarded, 6 cents.

Notary Public.—An officer whose function is to attest and certify by his hand and official seal various instruments, in order to give to them authenticity in other jurisdictions; to take acknowledgments and certify the same; and to perform other official acts, the power to do which is conferred by law. In order to become a notary public, a person must be a citizen of the United States. Minors are eligible, unless barred by constitutional or statutory provision. Women are eligible in many states, among them New York and New Jersey. A notary is empowered to administer oaths, take affidavits, depositions, and the acknowledgment of creditors in bankruptcy proceedings.

Note.—Described and defined in the Uniform Negotiable Instruments Law, thus:

1. It is a written promise without condition.
2. By the maker to another, or to maker's order.
3. To pay a sum certain in money or to order or bearer.
4. On demand at a fixed or determinable future time.

Circulating notes are bearer notes in even denominations, designed to circulate as money, as, national bank notes and federal reserve notes.

Collateral notes are those secured by deposit of securities.

Coupon notes are those having interest coupons attached.

Judgment notes are ordinary notes containing a power of attorney to appear and confess judgment for the debtor, thus making it unnecessary to bring suit against him.

Short-term notes are corporate bonds, usually secured by collateral, and ordinarily running for not over 5 years.

Notes Payable.—The sum of all notes and acceptances upon which a concern is primarily liable as maker, endorser, or acceptor.

Notes Receivable.—The sum of all notes and acceptances upon which others are liable to the holding concern.

Notes Receivable Discounted.—Contingent liability for all notes receivable discounted at bank but not yet liquidated by the makers.

Novation.—Substitution of other parties, or another party, for one or more original parties to a contract.

Nuncupative Will.—A will made by word of mouth before someone else and afterwards written out.

Obiter Dictum.—An opinion of a judge and so not of as great weight as a judgment rendered.

Obsolescence.—Loss in value resulting from new inventions of machinery or other facilities which accomplish equivalent work at less cost; or resulting from adverse legislation which makes the output less profitable.

Officer.—An executive who is elected and whose compensation is fixed by the board of directors.

Overdraft.—A debit balance in a deposit account which should normally have a credit balance.

Overs and Shorts.—Cash differences that are carried in a suspense account to the close of the accounting period.

Particular Average.—Incidence of partial loss or damage of ship, cargo, or freight, through unavoidable accident, upon the individual owners (or insurers) of their respective interests.

Partnership.—A contract between two or more competent parties to combine their money, property, skill, or labor for the transaction of a lawful business for profit. As between the parties the essential elements are:

1. An agreement.
2. Parties competent to contract.
3. Partnership capital or property.
4. A community of control.
5. A lawful business.
6. Profit-sharing as a motive.

Common law partnerships are those governed by the common law and in which members have unlimited liability.

Dormant partners, sometimes called sleeping partners, are those who invest as partners but whose connection with the firm is secret and who consequently take no part in the management. Dormant partners are both **secret** and **silent.**

General partners are those who take part in the management and who are liable for the firm's indebtedness without limitation as to amount.

Limited partners are those who do not participate in full liability, and take no part in the management.

Limited partnerships are those organized under state laws, restrictions being placed on the liability of one or more **special** partners.

Nominal partners are those who, although having no financial interest in the business, permit the use of their names as partners, and are therefore liable on firm obligations.

Silent partners have no voice in the management but may be publicly known to be partners. Sometimes called **sleeping partners.**

Special partners are those whose liability is limited by statute.

Subpartners are outsiders, with whom partners agree to share interest in the firm's profits and property.

Pen-Posted.—Account on which entries are made by pen.

Personal Account.—See "Account."

Pivot Desk.—Another name for the **interior clearing house** or **proof desk.** Also called **check desk.**

Policy.—The instrument containing the contract of insurance whereby the insurer, in consideration of one or more premiums received, agrees to assume certain risks to which the insured is subject.

Postal Savings.—Deposits made with the post office under the postal savings system are redeposited by the government in local banks. These deposits are known in the bank as **postal savings.**

Postdating.—See "Dating."

Posting.—Transferring items from journals to ledgers, and making the necessary cross-references in folio columns.

An **abstract of postings** is a list of ledger postings made usually to check up with the books of original entry.

Power of Attorney.—Formal sealed authority to an agent authorizing him to act for another. Such power of attorney may be **special,** granting authority to do only a single act, or **general,** granting authority to act generally.

Premium on Bonds.—Amount above par at which bonds are bought or sold.

Prepa d Expense.—An asset representing expenditures for services not rendered. Also known as **deferred charge** or **deferred asset.** (What is an asset to the payer is a liability to the payee, which liability is known as a prepaid income, deferred credit, or deferred liability.)

Prepaid Income.—Income received for services not yet rendered. It is therefore a liability. Also known as **deferred credit** or **deferred liability.** It is the opposite of accrued income. (What is a liability to the payee is an asset to the payer.)

Price.—The amount of money for which a commodity exchanges.

Primary Line.—Same as **direct line.**

Principal.—The sum involved in an obligation exclusive of interest earned or accrued.

Proceeds.—The amount of money received when a note or acceptance is discounted.

Profit.—Increase in net worth resulting from business operations.

Gross profit usually refers to excess of selling price over cost of goods sold.

Net profit, or **profit,** is excess over all costs of doing business.

Undivided profits are those which have neither been carried to surplus nor distributed to stockholders.

Profit and Loss Account.—An account into which all earnings and expense are closed. In banks the Profit and Loss account is not always used, such entries being posted direct to the **Undivided Profits account.**

Profit-Sharing.—A system of wage and salary payment by which employees participate in surplus earnings.

Progression.—A mathematical series in which each quantity, except the first and last, is a mean of a definitely determined type between its preceding and succeeding quantities.

Arithmetical progressions are those which increase or decrease by a common difference.

Geometrical progressions are those which increase or decrease by a common factor, called the **ratio.**

Proof Desk.—In banking, a clerk or group of clerks who have the duty of bringing together all departmental figures, striking a balance for the bank as a whole. The proof desk may relieve the receiving tellers of much detail by collecting the deposits from the cages and proving them in small batches. See **"Interior Clearing House."**

Property.—Right to enjoy the benefits of wealth.

Personal property is the right to enjoy the benefits of wealth in movable form.

Real property or real estate is the right to enjoy the benefits of wealth in form of land and buildings where such right lasts for one's own life or that of another.

Rights in real property of less dignity than a life estate are personal property.

Proprietorship.—Equity in assets over and above liabilities.

Protest.—A notary's certificate to the effect that an instrument has been presented, demand made for payment, and such demand refused, and that the notary has protested against such non-payment and has sent notice of such protest and non-payment to the party concerned. This is followed by the notary's seal and official signature. The purpose of protesting is to hold persons secondarily liable. Acceptors of drafts and makers of notes, being primarily liable, are held with or without protest.

An endorser may **waive protest** by writing "Protest waived" over his signature.

Protest may be for **non-acceptance** or for **non-payment.** The former is made on refusal of drawee to accept a draft. The latter is made on refusal of the maker of a note or the acceptor of a draft to pay at maturity

Proxy.—Written authority to an agent to vote at a stockholders' meeting.

Quash.—To discharge an action.

Quick Asset.—See "Asset."

Rate of Interest.—See "Interest."

Real Account.—See "Account."

Real Estate.—See "Property."

Realization and Liquidation Account.—See "Account."

Receipt.—Written evidence of surrender of wealth given to the party surrendering it by the party receiving it.

Temporary receipts are certificates issued to bond purchasers pending preparation of definitive bonds.

Treasurer's receipts are issued to purchasers of stock when the certificates are not ready to be issued. The receipts are later exchanged for certificates.

Trust company receipts are those issued to owners of securities who, to facilitate reorganization procedure in a corporation, surrender the securities themselves to a trust company as custodian in order that a properly constituted committee may look after the owners' interests.

Warehouse receipts are given for goods placed in warehouses. Transfer of title to the goods is made by assigning the receipts.

Receiver.—One appointed to take charge of property in bankruptcy proceedings pending appointment of a trustee by the creditors.

Ancillary receivers are those appointed to manage property situated in jurisdictions other than the one in which the principal receiver receives his authority.

Recognizance.—An obligation of record to do some particular act, as to pay a debt, or keep the peace, or to appear in court.

Reconcilement.—Due to delay in transit, a bank's ledger will not agree with the depositor's books at any given time. A reconcilement shows the two balances and accounts for the outstanding items.

Recoupment.—The right of a defendant to set up a claim for damages against the plaintiff at the same action, because of his violation of an obligation owing on the contract on which he sues, or for some failure of consideration.

Recourse.—The right by the holder of a note to look to the previous endorser to pay the amount set forth in the note.

Rediscount.—A note or similar obligation which has been discounted or purchased by a bank, then endorsed and sold to another bank, usually the federal reserve, for the purpose of raising funds.

Referee.—In judicial proceedings, an officer appointed by the court to investigate and report a decision as to some feature of a matter in suit.

Register.—A memorandum book in which particular transactions are entered as they occur. Example is a certificate of deposit register in which each certificate of deposit is recorded as issued.

Bond register. See "Books of Account."

Voucher register. See "Books of Account."

Remainder.—That remnant or residue of interest which, on the creation of a particular prior estate, is by the same instrument limited to another to be enjoyed on the termination of that estate.

Remittances.—See "Cash Letter."

Repairs.—Expenses incurred in the upkeep of fixed assets of a nature such that their cost is fairly uniform from year to year. The term is relative, for what might be regarded as repairs in a very extensive plant requiring the constant replacement of parts of considerable magnitude, might properly be considered replacements in a smaller plant, to be taken care of by means of depreciation reserves.

Replacements.—Renewals of sufficient cost to make it desirable to provide a depreciation reserve against which they may be charged, thus avoiding extraordinary charges to Profit and Loss in those years when they are made.

Replevin.—An action to recover possession of property.

Report of Condition.—In banking, a formal statement, required by law, of assets and liabilities, with supporting schedules and other pertinent information.

Reserve.—A segregation of surplus, or a retention of revenues equivalent to losses in asset values. In the former case the reserve is a **reserve of surplus**; in the latter case, a **valuation reserve.** In banking, an amount in cash or in assets quickly convertible into cash which can be used in paying depositors.

Reserve fund.—An amount set aside in form of cash or investments for general or special purposes.

Returns and Allowances.—Deduction from gross sales for defective goods and containers returned by customers; also for rebates granted to customers.

Revenue.—Income from all sources.

Operating revenue is that derived from operations as distinguished from that derived from investments and miscellaneous sources.

Reversion.—The residue of an estate left after the granting of part of it to another by the grantor.

Royalty.—A payment made for the use of a patent, for the privilege of extracting ores from land, or for the privilege of publishing books.

Safekeeping.—Securities left with a bank for the convenience of the owner, the bank acting as bailee.

Sale.—The Uniform Sales Act defines a sale as "an agreement whereby the seller transfers the property in goods to the buyer for a consideration, called the price."

A sale should be distinguished from a **contract to sell.** In case of the latter the goods are not delivered and title does not pass. A sale is an executed contract, whereas a contract to sell is an executory contract.

Salvage.—Value an article possesses for some use other than that to which it has been devoted.

Savings Account.—An account on which interest is paid, the rules of which provide that the passbook or receipt must be presented for each deposit and withdrawal. Before withdrawal can be made the bank retains the privilege of requiring notice.

Savings Bank.—A bank specializing in savings accounts. In a number of states only mutual organizations can use the name.

Scrap.—Value an article possesses when broken up. Sometimes termed **junk.**

Scrip.—In general, a temporary receipt or certificate.

Scrip dividends are those paid in form of promissory notes which usually bear interest and fall due on a specified date, or after some event, such as the sale of an issue of bonds.

Seal.—An impression upon wax, paper, etc., to authenticate any document to which it is attached; or a metal die with which an imprint is made on the document.

Secondary Line.—Amount which an individual or a business has endorsed at the bank; or amount which the bank is willing to accept on such an endorsement.

Sinking Fund.—An amount set aside in form of cash or investments for the purpose of liquidating some liability.

Specialty.—A written, sealed, and delivered instrument.

Statement.—A setting forth in systematic form of all data with reference to some phase of a business undertaking. To present essential details, subordinate schedules are frequently appended. In banking, a list of checks paid on account, deposits and balances furnished the depositor, commonly made up each month; also a statement of assets and liabilities of a customer or of the bank itself.

Balance sheets set forth the status of a business as at a given date.

Consolidated balance sheets set forth the status of affiliated businesses as at a given time.

Consolidated income statements set forth the results of operations of affiliated enterprises over a period.

Income statements set forth the results of operations over a period.

Statements of affairs set forth the status of an insolvent business as at a given time, the arrangement being such as to show both book value of

assets and what they are expected to realize and gross liabilities and how they are expected to rank.

Statements of realization and liquidation are employed in winding up the affairs of a concern to set forth assets unrealized and liabilities not yet liquidated, assets realized and liabilities liquidated and the loss or gain resulting, and resulting cash to be turned over.

Statements of receipts and disbursements set forth cash on hand at the beginning of a period, receipts and disbursements during the period, properly classified, and the balance on hand at the close of the period.

Statistics.—The science of interpreting large numerical quantities by means of processes of summarization.

Stock.—Share issued by a corporation, evidenced by formal certificates representing ownership therein. The total amount of such shares is known as the capital stock of the corporation.

Assented stock is that upon which one or more assessments have been paid in case of reorganization procedure, thus indicating the assent of the holder to the reorganization.

Common stock is that upon which dividends are paid only after dividend requirements on preferred stock and interest requirements on bonds are met. When there is but one class of stock it is common.

Donated stock is stock of a corporation which has been given back to be sold at a discount, usually to afford working capital in cases where the stock was originally issued in payment for fixed assets.

Guaranteed stock is that which is guaranteed as to principal or interest, or both, by some other corporation or corporations.

Inactive stock is that which is seldom traded in on the exchanges.

Preferred stock is that which has prior rights over common stock either as to dividends or assets, or both. Various provisions are found relative to the voting power, as for example, the preferred stock may be given control of the corporation if dividends thereon remain unpaid for two consecutive years. In case of **cumulative preferred stock** unpaid dividends become a **lien** upon profits of following years.

Treasury stock is that which has been returned to the treasury of the issuing corporation.

Unissued stock is the excess of authorized over issued stock.

Stock bonuses are gifts of stock offered to furnish incentive to investors to buy some other security of the issuing company.

Stock subscriptions are agreements to purchase the stock of a corporation. They become effective only when ratified by the corporation, unless accepted by a trustee in behalf of the corporation.

Stock Right.—Privilege extended to stockholders to subscribe to new stock at a price below the market value of outstanding stock.

Stop Payment.—An order given a bank by a depositor directing that the bank refuse to honor a check which has been issued by the depositor.

Stoppage in Transitu.—If a buyer becomes insolvent while goods being shipped to him are in transit, the seller has the right of stoppage in transitu, i.e., he may again take possession of them and will have priority over all other creditors of the insolvent.

Supplies.—Materials used in manufacture but which do not become a part of output.

Surplus.—In case of corporations having only par value, stock surplus ordinarily measures excess of net worth or proprietorship over par value of stock outstanding.

Capital surplus is that derived from extraordinary sources, as sale of stock at a premium or sale of fixed assets at a profit.

Surplus from operations is that derived from undertakings from the carrying out of which the business was established.

Syndicate.—An association of bankers formed to sell an issue of securities.

Tax.—Levy made by a government to pay running expenses and to finance public works.

Direct taxes are those levied upon those expected to bear the burden. Poll, property, income, and inheritance taxes are usually regarded as direct.

Indirect taxes are those shifted from those upon whom they are levied to others. Customs and excise taxes are usually regarded as indirect.

General property taxes are those levied on all, or nearly all, property, real and personal, in private ownership.

Excise taxes are those levied upon commodities, this term being broadly interpreted.

Inheritance taxes are those levied on estates inherited, certain exemptions being allowed.

Capitation taxes are those paid by everybody in a community; **poll taxes.**

Telegraphic Transfer.—A telegram sent by one bank to another, directing that money be paid.

Teller.—In banks, the person who actively receives or pays deposits, or who otherwise waits on the public accepting or delivering valuable documents.

Tenancy in Common.—A holding by two or more persons of a piece of property. Upon the death of one, the deceased's share goes to his heirs and not to the other tenants as in joint-tenancy.

Time Deposits.—Funds left with a bank which are only payable after expiration of a stated period. For reserve purposes, under the Federal Reserve Act, only such deposits can be considered as time deposits which still have a maturity of over 30 days.

Trade Acceptance.—See "Acceptance."

Trade-Mark.—A distinguishing mark, device, or symbol used by a manufacturer or merchant to identify and advertise his goods.

Transit.—Checks or corresponding items that must be sent by mail for collection.

Transit Letter.—Another term for cash or remittance letter.

Traveler's Check.—A cashier's check or draft printed in even denominations, carrying the signature of the payee for identification.

Treasurer's Check.—Similar to cashier's check, except that it is issued by a trust company or a trust department of a bank.

Trial Balance.—A list of balances of all general ledger accounts made to determine the correctness of postings from books of original entry as well as the correctness of the work of determining these balances. Sometimes the list consists of the account totals instead of the balances.

Trover.—An action against another for the wrongful detention of property.

Trust Department.—Department of a bank handling fiduciary matters.

Trust Fund.—Money placed in the hands of a trustee for purposes of investment and management.

Trustee.—One appointed by creditors of a bankrupt to take over his prop-

erty, reduce it to cash, pay off all charges, and distribute the remainder among creditors according to law.

More generally, a trustee is any person placed in charge of property for the benefit of another known as the *cestui que trust.*

Turnover.—Rapidity of replacement of capital invested in inventories, accounts receivable, etc.

Two-Named Paper.—Notes or similar negotiable paper that have been signed by two parties or signed by one and endorsed by a second.

Ultra Vires.—Beyond the powers of; applied to the acts of directors of a corporation when beyond the power of the charter of that corporation.

Undivided Profits Account.—In bank accounting the surplus is a formal account to which entries are only made by action of the board of directors. The net profits for the period, the payment of dividends, and the charging off of losses is usually made against a proprietorship account known as Undivided Profits.

Unilateral Contract.—A contract where only one promise is to be performed.

Value.—The value of a given quantity of wealth is that quantity multiplied by the price.

Void.—Destitute of legal effect.

Voidable.—Not void unless made so by disaffirmance, or a decree of court.

Voucher.—Any document which serves as proof of a transaction.

Voucher System.—A scheme of accounting under which distribution of all expenditures is made on vouchers preliminary to their entry in the voucher register.

Waive.—To give up; to forego a right.

Warrants.—Checks drawn by a national, state, or other government body against its treasurer; or similar items drawn by large semi-public organizations, such as a railroad. A warrant is drawn by an officer against the organization's own treasurer. (Often payable at a bank.)

Warranty.—Defined by the Standard Dictionary as "an assurance or undertaking by the seller of property, express or implied, that the property is or shall be as it is represented or promised to be, as to quantity, quality, or title.

Will.—A formal written disposition of property to take effect after death, made by a person of sound and disposing mind.

Working Asset.—See "Asset."

Work in Process.—Materials in process of manufacture.

SECTION 33

TAXATION

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SECTION 33

TAXATION

NATURE OF TAXATION IN GENERAL.—Taxation should be equal and uniform, but this does not necessitate rigid equality or narrow uniformity of treatment. Certain institutions are properly exempt; others of a harmful character should be subjected to especially heavy taxation. Productivity and cheapness of collection are factors to be considered. Only **approximate justice** is secured under any system of taxation. In the United States the courts adhere to the theory that taxes should be proportioned to **benefits derived.** This is only a general rule and of varying validity under different circumstances. Thus it is not possible to determine exactly the extent to which particular persons benefit from governmental activities. **Ability to pay** is the basis upon which the majority of economists think taxes should be apportioned. There is, however, no simple measure of ability to pay. In general, ability to pay is the best basis for apportionment of general taxes, but not necessarily for specific taxes. Income, consumption, and property are possible **measures of ability.** Any measure of ability is only approximately correct.

Proportional taxation consists in levying taxes in direct proportion to income.

Progressive taxation consists in increasing the tax rate as amount of income or property increases.

PROVISIONS OF FEDERAL CONSTITUTION.—The character of taxation in the United States is determined, fundamentally, by constitutional provisions to the effect that:

1. "Direct taxes shall be apportioned among the several states—according to their respective numbers."
2. "All duties, imposts, and excises shall be uniform throughout the United States."
3. "No state shall, without the consent of Congress, levy any imposts or duties on imports or exports except what may be absolutely necessary for executing its inspection laws."

In 1894 the United States Supreme Court declared income taxes to be direct taxes. Eighteen years later the Sixteenth Amendment was adopted empowering Congress to levy taxes on incomes without apportionment among the several states and without regard to any census or enumeration.

Direct taxes are taxes levied upon those expected to bear the burden.

Indirect taxes are taxes shifted from those upon whom they are levied to others.

Poll, property, income, and inheritance taxes are usually regarded as **direct.**

Customs and excise taxes are usually regarded as **indirect.**

State and Local Taxation

GENERAL PROPERTY TAX.—This may still be regarded as the basis of state and local taxation. It is levied, theoretically, at least, upon nearly all property, real and personal, in private ownership. In each community assessors prepare statements of taxable property owned by the people. In some states they receive sworn **lists** of property owned and taxable from all residents. Practice of assessors and reviewing bodies regarding **valuation** of such property varies greatly. Taxes are levied on basis of valuations made. Owing to the serious defects of this tax there is a tendency to substitute for it other forms of taxation, notably the income tax.

CORPORATION TAXES.—In most systems of corporation taxation the following elements may be discovered:

1. The **incorporation fee,** to cover clerical expenses of registering corporations and value of privileges granted, the most important being limited liability.
2. The **franchise tax proper,** which covers valuable privileges granted to most public utilities.
3. The **general property tax,** which is supposed to impose upon the corporation a burden equivalent to that borne by the average taxpayer of the district.
4. The **income tax** in some jurisdictions.

SUMMARY OF ANNUAL TAXES PAID BY CORPORATIONS IN NEW YORK STATE.—The following summary, prepared by the Special Joint Legislative Committee on Taxation and Retrenchment of the State of New York, in 1921, is fairly typical of state taxation of corporations.

A—Taxes Paid by Business Corporations.

(The term "business corporations" covers mercantile and manufacturing corporations, excluding:

a. Real estate corporations.
b. Holding corporations.
c. Transportation and transmission corporations.
d. Elevated or surface railroads not operated by steam.
e. Waterworks companies, gas companies, electric or steam heating, lighting and power companies.
f. Insurance corporations.
g. Banks, State and national.
h. Savings banks.
i. Trust companies.
j. Investment companies.

(See article 9-a, section 210, Tax Law.)

1. Franchise Tax (article 9-a, Tax Law), 4½ per cent on net income.

(Minimum tax to be not less than $10 and not less than one mill upon each dollar of issued capital stock.)

(Definition of net income: "total net income before any deductions have been made for taxes paid or to be paid to the Government of the United States on either profits or net income or for any losses sustained by the corporation in other fiscal or calendar years whether deducted by the Government of the United States or not." Section 208, article 9-a, Tax Law.)

2. General Property Tax (articles 1–5, inclusive, Tax Law).

(Business corporations are taxable on real property and certain fixed equipment; they are exempt from the payment of taxes on personal property See article 9-a, sections 219-j, 219-i, Tax Law.)

B—Taxes Paid by Financial Institutions.

1. State and National Banks.
   - a. Bank Stock Tax (article 1, section 13, article 2, sections 23–24, Tax Law).
     - 1 per cent on value of shares (total value of shares equal to capital, surplus and undivided profits).
   - b. General Property Tax (articles 1–5, inclusive, Tax Law).
     - (Institutions paying the bank stock tax are taxable only on real property; they are exempt from the payment of taxes on personal property. See article 2, section 24-c.)
2. Trust Companies.
   - a. Franchise Tax (article 9, section 188, Tax Law).
     - 1 per cent on capital, surplus and undivided profits (based on *average* during preceding year).
   - b. General Property Tax.
     - (On real property; trust companies are exempt from payment of taxes on personal property. See article 9, section 205, Tax Law.)
3. Investment Companies.
   - a. Franchise Tax (article 9, section 188-a, Tax Law).
     - 1½ mills for each dollar, face value, of capital.
     - 1 per cent on surplus and undivided profits.
   - b. General Property Tax.
     - (On real property; investment companies are exempt from payment of taxes on personal property. See article 9, section 205, Tax Law.)
4. Savings Banks.
   - a. Franchise Tax (see article 9, section 189, Tax Law).
     - 1 per cent on par value of surplus and undivided earnings.
   - b. General Property Tax.
     - (On real and personal property; deposits in savings banks exempt from taxation.)
5. Insurance Corporations and Surety Companies.
   - a. Franchise Tax (article 9, section 187, Tax Law).
     - 1 per cent on excess of gross amount of premiums charged, over deductions allowed by law, on business done within this State during previous calendar year.
   - b. General Property Tax (on real and personal property).

C—Taxes Paid by Public Service Corporations.

1. Steam Railroads.
   - a. General Franchise Tax (article 9, section 182, Tax Law).
     - (Franchise tax is based upon the capital stock of the corporation. Tax rate variable, depending upon dividend rate, relation of assets to liabilities, and average price of stock sold.)
   - b. Additional Franchise Tax (article 9, section 184, Tax Law).
     - One-half of 1 per cent on gross intra-State earnings (not including earnings derived from business of an interstate character).
   - c. Special Franchise Tax (article 2, sections 44–49, Tax Law).
     - (Tax Commission annually determines valuation of special franchises subject to assessment in each city, town or village. Final equalized valuation is the assessed valuation on which all taxes based upon special franchise are levied by local authorities. Tangible property situated upon streets, highways, public places or public waters in connection with the special franchise is taxed with such franchise.)
   - d. General Property Tax.
     - (Real and personal property, excluding that which is assessed with special franchises, is taxed under this head.)
2. Telephone and Telegraph Companies.
   - (Taxed upon same basis as steam railroads.)
3. Elevated or Surface Railroads not operated by steam.
   - a. Franchise Tax (article 9, section 185).
     - 1 per cent on gross earnings from all sources within the State.
     - 3 per cent upon amount of dividends declared or paid in excess of 4 per cent upon actual amount of paid-up capital.

b. Special Franchise Tax (article 2, sections 44–49, Tax Law).
(Same as steam railroads.)
c. General Property Tax (same as steam railroads).
4. Other Transportation Companies (taxed upon same basis as steam railroads)
5. Waterworks Companies, Gas Companies, Electric or Steam Heating, Lighting and Power Companies.
a. Franchise Tax (article 9, section 186).
One-half of 1 per cent on gross earnings from all sources within the State.
3 per cent upon amount of dividends declared or paid in excess of 4 per cent upon actual amount of paid-up capital.
b. Special Franchise Tax (article 2, sections 44–49, Tax Law).
(Same as for steam railroads.)
c. General Property Tax.
(Same as steam railroads.)

D—Taxes Paid by Corporations Not Included in the Above Classes.
1. Realty Companies.
a. General Franchise Tax (article 9, section 182, Tax Law).
(Franchise tax based upon the capital stock of the corporation.)
b. General Property Tax (on real and personal property).
2. Holding Companies.
a. General Franchise Tax (article 9, section 182, Tax Law).
b. General Property Tax (on real and personal property).

Federal Income Tax Procedure[1]

HISTORICAL.—Wisconsin enacted the first state income tax law in 1911. Other states soon followed. In 1915 Connecticut began taxing incomes of corporations. In 1917 New York levied a franchise tax of 3% on manufacturing and mercantile corporations. In 1919 New York began the taxation of personal incomes.

The first federal income tax was levied during the Civil War. One was levied in 1894 but was declared unconstitutional a year later on the ground that it was a direct tax.

The corporation excise tax of 1909 was an income tax in fact but not in form.

Various developments and refinements have been introduced in the laws of 1913, 1916, 1917, 1918, and 1921, the tendency being toward eliminating arbitary provisions and recognition of accepted customs and practices in business procedure and accounting.

Law of 1909.—This provided that every corporation "be subject to pay annually a special excise tax with respect to the carrying on or doing business by such corporation—equivalent to one per centum upon the entire net income over and above five thousand dollars received by it from all sources during such year." It was declared constitutional on the ground that it was an excise tax, not an income tax. The law provided that net income be determined by deducting from gross income received certain costs, expenses paid, and losses. In actual administration of the law the tax was paid on net income as ascertained in ordinary accounting practice, i.e., by deducting

[1] The material contained in the remainder of this section is based upon "Income Tax Procedure, 1923," by Robert H. Montgomery. In so far as income tax administration is dependent upon specific provisions of any statute, those of the Revenue Act of 1921 control. Present procedure before the Bureau of Internal Revenue has been evolved from experience derived from administration of the several revenue laws enacted since passage of the Sixteenth Amendment. It has now become fairly well standardized, so that future changes are not likely to alter its more fundamental aspects.—The Editor.

accrued expenses from earned income. The effective period of this law extended from Jan. 1, 1909, to Dec. 31, 1912.

Law of 1913.—This law, effective Mar. 1, 1913, was passed following the ratification of the Sixteenth Amendment. It placed the personal exemption at $3,000 for single persons, with an additional $1,000 for married couples. The former exemption of $5,000 to corporations was eliminated. The normal tax for corporations and individuals was 1%. For individuals only surtaxes began with 1% when net income reached $20,000, and increased gradually to 6% on portions of income in excess of $500,000. The 1913 law contained provision for an excise tax of 1% on net income of corporations for January and February, 1913.

Deduction for depletion of mines was restricted to 5% of value of output.

Law of 1916.—The normal rate for both corporations and individuals was made 2%, and the surtax on individual incomes was made to range from 1% to 13%. The lowest surtax rate applied to income immediately above $20,000, the highest to that part of income exceeding $2,000,000. The law was passed Sept. 8, 1916, and applied to income received after Jan. 1, 1916. This law definitely fixed Mar. 1, 1913, as the date upon which appreciation and depreciation of property were to be measured for tax purposes. Stock dividends were included in taxable income. The arbitrary 5% limitation upon depletion allowances was eliminated. Losses in deductions entered into for profit but not connected with an individual's trade or business were made allowable deductions, to an amount not exceeding the profits arising therefrom. The 1916 law was in effect from Jan. 1, 1916, to Dec. 31, 1916.

Law of 1917.—This law was passed Oct. 3, 1917, and became effective as of Jan. 1, 1917, remaining in effect one year. The revenue Act of 1917 contained two separate laws:

(a) A reenactment of the 1916 law with amendments. This was known as the Act of 1916, as amended by the Act of Oct. 3, 1917.
(b) The War Income Tax Act of Oct. 3, 1917.

Both (a) and (b) had their own separate normal and surtax rates and exemptions. An unmarried individual with an income over $1,000 but not in excess of $3,000 was subject to tax under the War Income Tax Act but not subject under (a). A married man living with his wife, or a single person head of a family, with an income over $2,000 and not over $4,000 was likewise only subject to tax under the War Income Tax Act of Oct. 3, 1917. Single persons with an income over $3,000 and married persons or heads of families with an income over $4,000 were subject to tax under both (a) and (b).

"Information at the source" was substituted for collection at source. Deduction of gifts by individuals to charitable, religious, and educational institutions was permitted up to 15% of net taxable income as calculated without this deduction. Limitations were imposed on several deductions, income and excess profits taxes being made non-deductible, also interest on money borrowed for purchase of tax-exempt securities. For the new 4% tax on corporations permission was given to deduct dividends on stock in other corporations. To prevent corporations from avoiding the tax by postponing dividend declarations, the law prescribed that dividends be "taxed to the distributee at the rates prescribed by law for the years in which such profit or surplus was accumulated by the corporation." This was repealed by the 1918 law.

The 1917 law introduced **excess profits taxes.** A law of this type was

passed Mar. 3, 1917, but was replaced by act of Oct. 3, 1917, which also placed a heavy levy on supernormal profits. For treatment of this act and its successor of 1918, see Montgomery's "Excess Profits Tax Procedure, 1921."

Law of 1918.—This law was finally approved Feb. 24, 1919, but was retroactive to Jan. 1, 1918. It remained in effect until the effective date of the act of 1921, which, for most provisions, was Jan. 1, 1921. This law completely replaced the 1916 and 1917 acts. It imposed a new version of profits tax, certain luxury taxes, and other internal revenue charges. Normal rate and corporation tax rate were both 12%, with a reduction to 6% on first $4,000 of the taxable income of a citizen or resident of the United States. These rates stood only until Jan. 1, 1919, when normal rate applying to taxable income of a citizen or resident became 8% (4% on first $4,000) and the corporation tax dropped from 12% to 10%.

Surtaxes on individual incomes ranged from 1% to 65%, the highest rate applying to portions of income exceeding $1,000,000. The maximum total rate in 1918 was 10% higher than in 1917, and the higher normal rate and steeper progression made the tax heavier on moderate incomes than was the preceding one. Maximum total rate on 1919 and 1920 incomes was 73%.

The provision permitting an individual to deduct losses not incurred in trade was liberalized. For the first time the individual was required to report on basis of his annual accounting period, even though it did not coincide with the calendar year. Affiliated corporations were required to file **consolidated returns.** Depreciation allowances were liberalized. Depletion of mines and of gas and oil wells was placed upon a generous basis. Special provision was made for charging off reasonable amortization on equipment contributing to prosecution of the war. For the first time corporations were relieved of the arbitrary limitation on deductible interest, in force in some form since 1909, also of the discriminating tax on dividends received from other corporations. Income and excess profits taxes paid to other jurisdictions upon income arising therein were, under certain conditions, allowed as credits against the tax. A specific credit of $2,000 was granted corporations. As under previous laws, members of partnerships were taxed as individuals. **Personal service corporations** were placed in the same category as partnerships.

Law of 1921.—This law was approved Nov. 23, 1921. It was a rewritten draft of the 1918 law. The law became effective Jan. 1, 1921, but some radical changes provided for did not become effective until Jan. 1, 1922, such as the sections which abolished the excess profits tax and the personal service corporation, increased the corporation tax rate, and established a new class of capital gains and losses. The personal service corporation disappeared with the abolition of the excess profits tax, and the income tax rose from 10% to 12½%. Surtax rates on individual incomes were reduced. The maximum rate was made 50% instead of 65% under the 1918 law, and applied to all incomes in excess of $200,000. Surtaxes began when the $6,000 point was reached and for incomes between $6,000 and $10,000 were 1%.

Capital gains were established as a new division of income. Beginning Jan. 1, 1922, profits made by individuals from sales or exchanges of property "held for profit or investment," were subject to a maximum rate of 12½% instead of the regular rates which, since that date, range as high as 58% (normal plus surtaxes).

The section prescribing the basis for determining gain or loss, which be-

came effective Jan. 1, 1921, adopts the Frierson rule (which, in case of property purchased before Mar. 1, 1913, states that a profit or loss must be shown when comparison is made with original cost and be limited to the portion thereof accrued after Mar. 1, 1913) and also liberalizes the definition of the closed transaction. The law states that no gain or loss on exchanges of property for property shall be recognized unless property received in the trade "has a readily realizable market value." In certain cases the gain need not be accounted for at time of exchange.

An innovation was the breaking away from the practice of refusing to permit a business loss in one accounting period to offset income of another.

Reduced surtax rates became effective in 1922 and personal exemptions were liberalized, the changes affecting the 1921 returns. For a married person or the head of a family whose income does not exceed \$5,000, the exemption was increased from \$2,000 to \$2,500. The allowance for each dependent was increased from \$200 to \$400.

After Jan. 1, 1922, personal service corporations were taxed as ordinary corporations.

Affiliated corporations were given the option, after Jan. 1, 1922, of filing separate or consolidated returns.

The law set up a Tax Simplification Board to investigate the procedure of the Bureau of Internal Revenue and to make recommendations for its simplification.

The law required that the Treasury pay interest on taxes refunded.

Other changes included a limitation of time for filing amortization claims; a provision that returns must be filed in all cases where an individual's gross income exceeds \$5,000; a limitation on the deduction of interest to carry Liberty bonds; permission to deduct business traveling expenses in full; and a change in the limitation periods for amended returns.

There were also important changes in administrative features, such as the sections permitting binding agreements between the Treasury and the taxpayer, changing the procedure with reference to appeals, and authorizing the Treasury to defer collection in cases of undue hardship.

Administration of Income Tax

The administration of the income tax law is placed in the hands of the Commissioner of Internal Revenue, subject to supervision and control by the Secretary of the Treasury. In the following discussion wherever the Treasury regulations are quoted but the regulation number is omitted it is understood that Regulations 62 are referred to.

BUREAU OF INTERNAL REVENUE.—The Bureau of Internal Revenue collects federal revenue other than customs. There are five deputy commissioners[2] and one Assistant Commissioner, the latter acting in the Commissioner's place. Income and excess profits taxes are collected through the local collectors of internal revenue, who are also charged with the collection of all other internal revenue taxes. Collectors of internal revenue are held primarily responsible for the proper collection of the tax in their districts. There are some 64 collection districts, each with a collector at its head assisted by subordinates. There are also 35 internal revenue divisions with internal revenue agents or supervising internal revenue agents in charge.

[2] The deputies are in charge of the following: 1. Income Tax Unit; 2. Estate and Capital Stock Tax Unit; 3. Sales Tax Unit; 4. Accounts and Collections Unit; 5. Miscellaneous (publications, administration, etc.).

Procedure.—Procedure of the Bureau of Internal Revenue is as follows:[3]

1. The taxpayer makes a return and pays the collector, who receives the return, one-fourth or all the tax shown due on face of return.

2. The collector lists the returns, shows taxes due, makes a few obvious corrections in some cases and forwards returns to Washington.[4]

3. In Washington returns are first checked against collector's lists and the original tax verified.

4. The "audit" of returns begins and supplemental amounts of taxes due [and amount of overpayments] are determined; taxpayer is notified and [after procedure laid down in Sec. 250 (d) has been complied with], return is sent to a separate section of the Bureau for entry on a supplemental list.[5]

5. Supplemental lists are transmitted monthly to collectors, taxpayer is formally notified [of additional taxes], and tax is due for payment within ten days after such notice.

COMMITTEE ON APPEALS AND REVIEW.—Under the 1918 law[6] the Commissioner was empowered to appoint an Advisory Tax Board.[7] The Board was appointed Mar. 14, 1919, and abolished Oct. 1, 1919.

In place of the Board, a Committee on Appeals and Review was established, membership being recruited from within the Bureau.

Organization.—The Committee is independent of the Income Tax Unit and in theory is responsible only to the Commissioner. Its personnel embraces a chairman, vice-chairman, eleven members, and a secretary, who give their entire time and attention to all matters referred to the Committee for consideration. All members have held responsible positions in the Bureau as heads of divisions or chiefs of sections and are either attorneys at law or accountants.

Procedure.—The principal duties of the Committee are:

1. Hearing and consideration of cases appealed by taxpayers from action of Income Tax Unit.
2. Consideration of questions submitted by Income Tax Unit with request for Committee's advice.
3. Criticism or approval of letters making new rulings or new applications of old rulings which are submitted by Income Tax Unit or the Commissioner.
4. Criticism or approval of proposed Treasury decisions.
5. Consideration of matters presented in informal conferences by officers of the Bureau and by taxpayers upon questions of interpretation, policy, or procedure.

Cases may be **appealed** to the Committee only after final disposition has been made of the case by the Income Tax Unit, and upon such questions, either as to law or facts, as are in controversy between taxpayer and Income Tax Unit.[8]

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[3] A. E. James, Bulletin of National Tax Association, Vol. VI, p. 49.

[4] Returns on form 1040A are not sent to Washington, but are audited in collectors' offices.

[5] If it is found there has been an overpayment of tax, the taxpayer is sent a certificate of overassessment which enables an adjustment to be made by the local collector.

[6] Sec. 1301 (d-1).

[7] For a full discussion of its powers and procedure see Montgomery: Income Tax Procedure, 1920, pp. 159–161.

[8] Prior to the 1921 law, it was contrary to the policy of the Bureau to defer assessments pending the taking up of an appeal. This was an unjust rule, which is now, in most cases, abolished by Sec. 250 (d) of the 1921 law.

Following ruling outlines procedure in hearings before the Committee:

Ruling. When an appeal is taken from a ruling of the Income Tax Unit to the Committee on Appeals and Review or a question is certified to that Committee at the request of the taxpayer and an oral presentation is desired, the record shall immediately be examined to ascertain as to whether there is a question of law involved. If it is found that a question of law is involved, the Solicitor shall be notified and he will thereupon designate one member of the Solicitor's office to sit with the Committee and himself for the purpose of hearing the appeal, or if the Solicitor finds it inconvenient to sit with the Committee he may designate two members of his office to do so.[9]

At the hearing before the Committee the taxpayer or his attorney or representative will be expected to make his full oral argument on the law as well as the facts, and this presentation shall be the only oral presentation except in unusual circumstances, or unless a further argument of the facts or the law is deemed desirable by either the Chairman of the Committee or the Solicitor.

The attorney or attorneys so designated by the Solicitor for the hearing will be expected, in conjunction with the Solicitor and the Conference Committee in the Solicitor's office, if the Solicitor so desires, to consider the legal aspects of the case, and the Solicitor's recommendation in the form of an opinion or memorandum will then be made to the Chairman of the Committee, and thereupon the Committee's findings shall be prepared and submitted to the Commissioner for his approval. . . . (C. B. 3, p. 370; O. D. 709.)

The appeal and related papers are transmitted to the Committee on Appeals and Review and docketed for assignment to a member for consideration.

Upon assignment of the case the papers are carefully examined. In event that additional information is desired or an oral hearing is requested or is deemed advisable, taxpayer is notified.

In event of an oral hearing, which will presumably be final, taxpayer submits such arguments and presentation both as to law and facts as he desires to have considered by the Bureau. The oral hearing may be supplemented by a written brief to be submitted after the hearing. Three copies of this brief should be furnished.

Conclusions of individual members of the Committee, after being formulated and reduced to writing, are submitted to a conference of the entire Committee and, when agreed to, are submitted to the Commissioner as recommendations.

Upon approval of Committee's recommendation by the Commissioner, the decision is final as far as the Bureau is concerned. It will not be reconsidered except upon presentation of new and material evidence, accompanied by an explanation satisfactory to the Committee of failure to produce such evidence prior to closing of the case.

The taxpayer is notified by the Committee of its recommendation and the case and related papers are thereupon returned to the Income Tax Unit for such further action as is necessary in accordance with the decision of the Committee, of which action the taxpayer is duly notified by the Income Tax Unit.

REGULATIONS GOVERNING PRACTICE BEFORE TREASURY.—The Commissioner has issued regulations (Department Circular No. 230, Revised Apr. 25, 1922, Form 23)[10] governing recognition of attorneys and agents and other persons representing taxpayers before the Treasury. Following are extracts:

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[9] As a general rule, the auditor who has handled the case also attends the conferences of the Committee.

[10] C. B. I-1, p. 469. This circular supersedes Treasury Department Circular No. 230 (C. B. 4, pp. 408–414), dated Feb. 15, 1921, as amended June 7, 1921, July 1, 1921, and Dec. 23, 1921.

Regulation. 2. *Applications for enrollment.*—Applicants for enrollment pursuant to these regulations shall submit to the Secretary of the Treasury an application, properly executed, on **Form 23,** . . . . Applications in any other form will not be considered. The statements contained in the application must be verified by the applicant. The applicant must also take the oath of allegiance, and to support the Constitution of the United States as required by section 3478, Revised Statutes. A person who can not take the oath of allegiance, and to support the Constitution of the United States can not be enrolled. Members of the bar of a court of record will apply for enrollment as attorneys; all others will apply for enrollment as agents. The Secretary of the Treasury may in any case require other and further evidence of qualification. Applicants will be notified of the approval or disapproval of their applications. All applications for enrollment must be individual, and individuals who practice as partners should apply for enrollment as individuals and not in the partnership name. An individual who has been enrolled may, however, represent claimants and others before the Treasury Department in the name of a partnership of which he is a member or with which he is otherwise regularly connected. Except as hereinafter provided in paragraph 3, a corporation can not be enrolled and attorneys or agents will not be permitted to practice before the Treasury Department for account of a corporation which represents claimants and others in the prosecution of business before the Treasury Department. Persons applying for enrollment who propose to act for such a corporation in the prosecution of claims and other business before the Treasury Department, will be subject to rejection, and enrolled attorneys or agents who act for a corporation in representing claimants and others in the prosecution of claims and other business will be subject to suspension from practice, as to such claims or business.

. . . .

4. *Restriction of right to be heard to parties and enrolled attorneys and agents.*—(*a*) The committee on enrollment and disbarment shall maintain in the office of the chief clerk, Treasury Department, a roll of attorneys and agents entitled to practice before the Treasury Department. It shall likewise maintain lists of those whose applications for enrollment have been rejected and those who have been suspended or disbarred. The chief clerk shall furnish copies of said roll and lists, with such additions thereto or subtractions therefrom as may be made from time to time, to the several bureaus, offices and divisions of the Treasury Department, and upon request may furnish information as to whether or not any person is enrolled as an attorney or agent before the Treasury Department.

(*b*) All bureaus, offices and divisions of the Treasury Department are hereby prohibited from recognizing or dealing with anyone appearing as attorney or agent unless the name of such attorney or agent appears upon the list of those entitled to practice before the Treasury Department, provided, however, that the head of any bureau, office or division may, in his discretion, temporarily recognize such representative pending action upon his application for enrollment, provided his name does not appear on the list of those whose applications for enrollment have been rejected or on the list of those who have been suspended or disbarred. It shall be the duty of the several bureaus, offices and divisions of the Treasury Department to ascertain in each case whether the name of one appearing before them in a representative capacity appears on the roll of those entitled to practice, whether such representative has been suspended or disbarred, and whether he is ineligible under section (*c*) of this paragraph or under section 190 of the Revised Statutes. Nothing herein contained shall preclude individual parties or members of firms, or officers of corporations, or authorized employees of firms or corporations, from appearing, upon proper identification, as representatives of their own interests or of their respective firms or corporations in any matter before the department in which such person, firm or corporation is concerned as a principal; but attorneys, counsel, solicitors, accountants and other agents for such persons, firms or corporations must be enrolled.

(*c*) No attorney or agent shall be permitted to appear in a representative capacity before the Treasury Department, or any of the bureaus, offices, units, divisions, subdivisions, or other agencies thereof, in regard to any claim, application for reaudit, refund, abatement or reduction in tax assessed, or any other matter, to which he gave actual personal consideration, or as to the facts of which he had actual personal knowledge, while in the service of the Treasury Department

The foregoing regulation is in addition to the inhibition contained in section 190 of the Revised Statutes of the United States, and does not authorize the appearance of an attorney or agent in the prosecution of any claim that would be prohibited by that section.

. . . .

6. *Causes for rejection, suspension or disbarment.*—(*a*) The Secretary of the Treasury may, as herein provided, suspend or disbar any enrolled attorney or agent shown to be incompetent or disreputable, or who refuses to comply with these rules and regulations, or who shall with intent to defraud, in any manner willfully and knowingly deceive, mislead, or threaten any claimant or prospective claimant, by word, circular or letter, or by advertisement. It shall be the duty of every attorney and agent to use the utmost diligence in furnishing evidence required in matters presented to the Treasury Department, and the use of any means whereby the final settlement of a claim or other business pending before the Treasury Department is unjustifiably delayed may be sufficient cause for suspension or disbarment. If any enrolled attorney or agent shall knowingly employ as correspondent or subagent in any matter pending before the Treasury Department a person who is at the time denied enrollment, or suspended or disbarred from practice before the department, such attorney or agent himself may be suspended or disbarred.

(*b*) Advertising by enrolled attorneys or agents which describes their capacity or ability to render service as enrolled attorneys or agents is forbidden. Letterheads, business cards, and insertions in directories, newspapers, trade journals, or other publications should set forth only the name and address of the attorney or agent and a brief description of his practice. The description should not do more than state the nature of the attorney's or agent's business, that is to say, whether he practices as an attorney, accountant or agent, and, if desired, any special field of service or practice covered. The use by attorneys, agents, or others of adjectives or other terms which might imply official capacity or connection with the Government or any of its departments, is specifically forbidden.

(*c*) The solicitation of claims or other business as attorney or agent for others before the Treasury Department by circulars, advertisements, or other means, including personal letters, communications, or interviews not warranted by previous business or personal relations with the persons addressed, is forbidden. *Advertising or solicitation which makes any suggestion of previous connection with the Treasury Department or acquaintance with its officials or employees, or any reference to the fact of enrollment, is specifically forbidden.*

(*d*) Statements or implications to the effect that an attorney or agent is in position by reason of past experience, past official connection, or personal association with the Treasury Department or any officials or employees thereof, directly or indirectly to influence the disposition of business in the Treasury Department, and statements or implications to the effect that the agent or attorney is able to obtain information or consideration that is not available to the public in regard to such business, are forbidden.

(*e*) While contingent fees may be proper in some cases before the department, they are not generally looked upon with favor and may be made the ground of suspension or disbarment. Both their reasonableness in view of the services rendered and all the attendant circumstances are a proper subject of inquiry by the department. The Commissioner of Internal Revenue or the head of any other Treasury bureau or division of the Secretary's office may at any stage of a pending proceeding require an attorney or agent to make full disclosure as to what inducements, if any, were held out by him to procure his employment and whether the business is being handled on a contingent basis, and, if so, the arrangement regarding compensation.

(*f*) Violation of any of the foregoing regulations is declared cause for suspension or disbarment of any attorney or agent enrolled to practice before the Treasury Department, while violation thereof by any person applying for enrollment as attorney or agent will be cause for rejection of his application.

Power of Attorney Must Comply With Certain Requirements.—

Ruling. . . . . Any power of attorney offered in evidence in any case will be accepted only provided it is in regular form. It is considered necessary in the case of an individual that the power of attorney be signed by the taxpayer, contain language to convey his intention, not necessarily in strictly legal form, and be attested before a notary public or be witnessed before two disinterested individuals. In the case of a partnership, a

power of attorney must be signed by all members of the partnership and properly sworn to or witnessed as above. In the case of a corporation, it must be signed by an officer of the corporation, attested by the secretary under the seal of the corporation and executed before a notary or attested as above. Under no circumstances shall a power of attorney which does not have attached to it a revenue stamp in the amount of 25 cents be accepted. . . . . (C. B. I-1, p. 419; Misc.)

The following form is suggested:

Power of Attorney

To the Commissioner of Internal Revenue,
Washington, D. C.

Sir:

Mr.............................., or/and Mr........................., is authorized to represent.. in connection with all tax returns which have been filed by this company with any department of the United States Government. The said representatives are authorized to act for it and in its name, place and stead. This letter will serve as written authority authorizing him to examine and secure copies of all returns, claims, correspondence and papers in connection therewith. This letter will also serve as written authority authorizing him to receive any warrants which may be issued in its name. We hereby specifically authorize the above mentioned representatives to secure, if necessary, copies of any income or excess profits tax returns heretofore filed by us.

The said representatives are vested with full Power of Substitution and Revocation. The execution of this instrument hereby ratifies and confirms all that said representatives shall lawfully do or cause to be done, by virtue hereof.

Respectfully,

(affix corporate seal)

....
(Name of Corporation)

attest:

By...................................
(Signature and Title of Office)

....
Secretary

Personally appeared before me, a Notary Public of the State of..........., County of.............. on..................., 192—,.. who being duly sworn according to law and having signed the foregoing in my presence, stated that he is.......................
(Title)

of......................, and that he executed
(Name of Corporation)

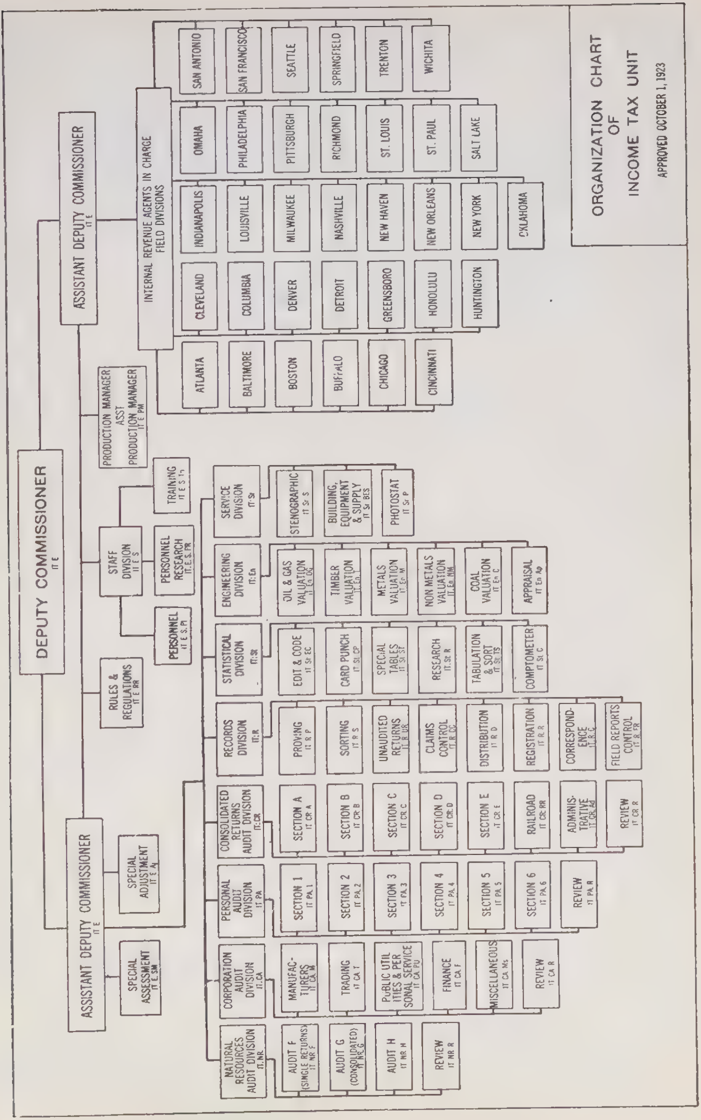
the foregoing power of attorney by virtue of the power vested in him by this corporation.

....
Notary Public

(affix notarial seal)

Power of Attorney

ORGANIZATION OF INCOME TAX UNIT.—A chart showing organization of the Income Tax Unit is reproduced on following page.



Organization of Income Tax Unit

ADMINISTRATIVE INTERPRETATION.—Pending construction of statutes by courts and subject to such construction, the Treasury supplies official interpretation of the law. The Treasury interprets the law strictly. Large sums are involved in disputes turning on close constructions of the law. Taxpayers cannot assume that their interests will be protected by blind conformity with Treasury rulings. The system assumes that they will not follow the rulings blindly, but will contest doubtful points operating to their disadvantage.

In recent regulations, interpretations are made as general and illuminating as possible. Instead of treating a narrow, particular instance, the Commissioner in most cases essays a comprehensive treatment of the problem of procedure involved and does not hesitate to enunciate general principles to serve as official guides to action by taxpayers.

Legal Force and Effect of Treasury Interpretations.[11]—The Supreme Court of the U. S. is final authority on income tax questions. In an old case this court said:

Decision. . . . . The construction of the law is open to both parties, and each is presumed to know it. Any instructions from the Treasury Department could not change the law or affect the rights of the plaintiff. He was not bound to take or adopt that construction. He was at liberty to judge for himself, and act accordingly. . . . .[12]

The following statement was made in a more recent case:

Decision. A practical construction by public officers whose duty it is to enforce a statute is conceded to be entitled to great influence, provided the statute presents an ambiguity which is real, and not captious. . . . .

Where a statute that has been construed by the courts has been re-enacted in the same or substantially the same terms, the legislature is presumed to have been familiar with its construction, and to have adopted it as a part of the law, unless a different intention is indicated; and the same principle is applied to statutes and parts of statutes which have been re-enacted after they have been construed by the legislative or executive departments of the government. (*Edwards* v. *Wabash Railway Co.*, 264 Fed. 610.)

Regarding taxpayer's right to question rulings and assessments, note the following authoritative quotation:

And it follows that it will be a legitimate mode of construing the present income tax law, in cases where its language in relation to a particular point or subject is obscure, confusing, or unintelligible, to compare it with the corresponding provisions on the same point in the earlier acts, which may be more clear and precise, and to presume that Congress intended its words to be understood in the same sense as before, unless there is such a distinct change of language as to compel the inference that a change in legislation was certainly intended.[13]

Note the following quotation from a decision of the U. S. Supreme Court:

Decision. In the interpretation of statutes levying taxes it is the established rule not to extend their provisions, by implication, beyond the clear import of the language used, or to enlarge their operations so as to embrace matters not specifically pointed out.

[11] Under this title Mr. Fred T. Field, formerly member of the Advisory Tax Board, presented a paper published in the Columbia University Lectures—The Federal Income Tax (Columbia University Press, 1921, pp. 91-113) in which he makes the following statements: "Rulings are of two principal classes—**administrative rulings** which deal with procedure, and **interpretative rulings** which purport to state the meaning of the statute and to affect substantive rights. Administrative rulings are made under authority of a delegated quasi-legislative power, and if within the scope of the delegation, have the effect of law as quasi-statutes. They are presumed to be valid. Interpretative rulings have no effect as law since they are not within the delegation of the quasi-legislative power and since no power of conclusive quasi-judicial construction is given to the Treasury Department. Interpretative rulings are, however, under some conditions aids to the construction of the statute and have certain important practical effects."

[12] *Elliott* v. *Swartwout*, 35 U. S. 137, 10 Pet. 137, 12 Curtis 46, 9. L. Ed. 373

[13] Black, Income and Other Federal Taxes, (4th Ed p. 36.).

In case of doubt they are construed most strongly against the government, and in favor of the citizen. *United States* v. *Wigglesworth*, 2 Story 369, Fed. Cas. No. 16,690; *American Net and Twine Co.* v. *Worthington*, 141 U. S. 468, 474, 35 L. Ed. 821, 824, 12 Sup. Ct. Rep. 55; *Benziger* v. *United States*, 192 U. S. 38, 55, 48 L. Ed. 331, 338, 24 Sup. Ct. Rep. 189.[14]

The authority of Treasury Department regulations is discussed in Black's "Income Taxes" (4th Ed.), p. 9:

But of course it is not within the lawful power of these officers to go a step beyond the limits of the act of Congress under which their authority is exercised. They could neither bring within the purview of the law or of their regulations anything not definitely within the words of the act, nor except from its operation anything not clearly meant to be excluded, nor add to the burden of the taxpayer anything which Congress did not intend to impose upon him. But within the limits of their rightful authority, regulations prescribed by the Commissioner of Internal Revenue, pursuant to statutory authority, with the approval of the Secretary of the Treasury where necessary, in respect to the assessment and collection of internal revenue taxes, or for the government of the officers of the revenue department, have all the force and effect of law, and are as binding as if incorporated in the statute law of the United States; and the acts of the Commissioner are presumed to be the acts of the Secretary. But the construction given to an act of Congress imposing internal revenue taxes by the Commissioner of Internal Revenue, though officially published, is not a construction of so much dignity that a re-enactment of the statute subsequent to the construction is to be regarded as a legislative adoption of that construction, and especially when the construction would make a proviso to the act repugnant to the body of the act.

Policy of Bureau Regarding Requests for Rulings and Advice upon Abstract Propositions.—

Ruling. It will be the policy of the Bureau not to answer any inquiry except under the following circumstances:

(*a*) The transaction must be completed and not merely proposed or planned.

(*b*) The complete facts relating to the transaction, together with abstracts from contracts, or other documents, necessary to present the complete facts, must be given.

(*c*) The names of all the real parties interested (not "dummies" used in the transaction) must be stated, regardless of who presents the question, whether attorney, accountant, tax service, or other representative. (C. B. I-1, p. 400; Mim 2880.)

Legal Effect of Changes in Form of Organization Made to Reduce Taxation.—

Ruling. A change of form from that of a corporation or association to that of a trust or partnership accompanied by a transfer of capital assets to trustees for the benefit of shareholders followed by a sale of such assets at a price in excess of the cost thereof to the corporation or association, and the distribution of proceeds to the beneficiaries (shareholders), such change being made for the main purpose of avoiding the tax which would accrue to the corporation had the sale been made by it, should be disregarded as a mere sham to avoid assessment of tax against the corporation or association upon the profit derived from such sale, and the corporation or association should be required to return as income any profit derived as though the sale had been made by it directly. (C. B. 2, p. 203; Digest S. 1385.)

The taxpayer against whom the foregoing case was decided, appealed to the courts and the opinion of the Solicitor was reversed.

Decision.[15] It is insisted in the opinion of the solicitor for the Bureau of Internal Revenue that this change is a sham and a subterfuge and is ineffective. This same opinion admits the right of an individual or corporation to regulate or change its business with a view of reducing or avoiding taxation in the future, but in contradiction with this admission holds that the parties involved in this transaction could not do so. Supporting this view there are several cited cases, most of them by state courts. The case of

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[14] *Gould* v. *Gould*, 245 U. S. 151, 38 Sup. Ct. 53, 62 L. Ed. 211.

[15] *Weeks* v. *Sibley*, 269 Fed. 155.

Pollard v. *Bank*, 47 Kans. 406, 28 Pac. 202, cited by the solicitor, is directly opposed to his contention. . . . .

Bearing in mind the rule of construction which the Supreme Court announced in the case of *Gould* v. *Gould*, 245 U. S. 151, 38 Sup. Ct. 53, 62 L. Ed. 211, and numerous other cases, to the effect that the provisions of the taxing statutes are not to be extended by implication beyond the clear import of the language used, and that they are to be construed most strongly against the government and in favor of the taxpayer, it is the opinion of this court that the right to change the status of an organization, or to dissolve an organization in any legal manner, is not made ineffectual because the motive impelling the change is to reduce or avoid taxation in the future. The right so to do is an incidental right, inseparably connected with an individual's right to own and control his property. It is practically identical with the sale by a citizen of tax-burdened securities and the investment of the proceeds thereof in tax-exempt ones, for the purpose of reducing or avoiding taxation.

Determination and Assessment of Tax

DUTY OF COMMISSIONER.—The function of determining and assessing the tax is delegated to the Commissioner.

Law. Sec. 1311. [Sec. 3176, Rev. Stat.] . . . . The Commissioner of Internal Revenue shall determine and assess all taxes, other than stamp taxes, as to which returns or lists are so made under the provisions of this section. . . . .

EXAMINATION AND AUDIT.—

Law. Sec. 250. . . . . (b) As soon as practicable after the return is filed, the Commissioner shall examine it. If it then appears that the correct amount of the tax is greater or less than that shown in the return, the instalments shall be recomputed. . . . .

Regulation. When the returns are received at the collectors' offices they are examined and listed before being forwarded to the Commissioner. As soon as practicable after the returns are received in the office of the Commissioner they are carefully audited in connection with any reports of examination that may have been made by agents of the Department. If error in the amount of tax as stated in the return is detected the tax is recomputed and if the amount is less than that shown in the return the excess will be credited or refunded. . . . . If the amount is greater than that shown in the return the deficiency will be handled as provided in section 250 (d) of the statute and article 1006. . . . . (Art. 1012.)

The returns, or at least the larger ones, are audited exhaustively "as soon as practicable," but this is usually long after payment of the tax.

Sec. 250 (b) of the 1918 and 1921 laws and the usual procedure which governs the examination of returns by revenue agents from the Commissioner's office in Washington, are supplemented by the provision of the law which gives to local collectors the right to question the accuracy of returns.

Law. Sec. 228. That if the collector or deputy collector has reason to believe that the amount of any income returned is understated, he shall give due notice to the taxpayer making the return to show cause why the amount of the return should not be increased, and upon proof of the amount understated, may increase the same accordingly. Such taxpayer may furnish sworn testimony to prove any relevant facts and if dissatisfied with the decision of the collector may appeal to the Commissioner for his decision, under such rules of procedure as may be prescribed by the Commissioner with the approval of the Secretary.

Regulation. If a collector has reason to believe that the amount of any income is understated in a return, he may on his own initiative take up the matter with the taxpayer and upon becoming satisfied that the amount was understated may increase it accordingly, subject to the right of the taxpayer to appeal to the Commissioner. The Commissioner, however, without the intervention of the collector may exercise original jurisdiction in cases of understatements or other errors in returns, in which event sections 250 and 1300 of the statute and section 3176 of the Revised Statutes,

as amended by section 1311 of the statute, are applicable instead of section 228 . . . . (Art. 451.)

In view of the right of appeal to the Commissioner in any event, if the collector gives notice of intention to increase an assessment, taxpayers should appeal at once to the Commissioner.

Collectors may summon any person residing or found within the state or territory in which their districts lie, and even in other districts, and make examinations authorized by law. If a return is not filed, the collectors are required to make returns from their own knowledge and from such information as they can obtain through testimony or otherwise.

Law. Sec. 1311. [Sec. 3172, Rev. Stat.] Every collector shall, from time to time, cause his deputies to proceed through every part of his district and inquire after and concerning all persons therein who are liable to pay any internal-revenue tax, and all persons owning or having the care and management of any objects liable to pay any tax, and to make a list of such persons and enumerate said objects.

Sec. 1311. [Sec. 3165, Rev. Stat.] Every collector, deputy collector, internal-revenue agent, and internal-revenue officer assigned to duty under an internal-revenue agent, is authorized to administer oaths and to take evidence touching any part of the administration of the internal-revenue laws with which he is charged, or where such oaths and evidence are authorized by law or regulation authorized by law to be taken.

Examination of Books and Persons.—Properly accredited officers of the internal revenue service have full power to examine books and records and to require attendance of the necessary persons at examinations into accuracy of income tax returns. The auditing and examinations, whether done in the office or in the field, are performed by internal revenue agents, who are under the direction of the Commissioner at Washington and not of the local collectors.

Law. Sec. 1308. That the Commissioner, for the purpose of ascertaining the correctness of any return or for the purpose of making a return where none has been made, is hereby authorized, by any revenue agent or inspector designated by him for that purpose, to examine any books, papers, records, or memoranda bearing upon the matters required to be included in the return, and may require the attendance of the person rendering the return or of any officer or employee of such person, or the attendance of any other person having knowledge in the premises, and may take his testimony with reference to the matter required by law to be included in such return, with power to administer oaths to such person or persons.

Sec. 1310. (a) That if any person is summoned under this Act to appear, to testify, or to produce books, papers, or other data, the district court of the United States for the district in which such person resides shall have jurisdiction by appropriate process to compel such attendance, testimony, or production of books, papers, or other data.

(b) The district courts of the United States at the instance of the United States are hereby invested with such jurisdiction to make and issue, both in actions at law and suits in equity, writs and orders of injunction, and of ne exeat republica, orders appointing receivers, and such other orders and process, and to render such judgments and decrees, granting in proper cases both legal and equitable relief together, as may be necessary or appropriate for the enforcement of the provisions of this Act. The remedies hereby provided are in addition to and not exclusive of any and all other remedies of the United States in such courts or otherwise to enforce such provisions. . . . .

Liability to examination extends to persons, other than the taxpayer, who have knowledge of his income.

Relations with Revenue Agents.—Revenue agents usually call upon individual taxpayers without notice. In the case of business concerns appointments convenient to both are often made by telephone. Although

the right of revenue agents to examine the books and accounts of all taxpayers is unquestioned, they usually do not insist on an immediate examination to inconvenience of the taxpayer.

Taxpayers should furnish the revenue agent with all information called for and expedite the examination by placing at his disposal original data supporting returns. In case of doubt, too much rather than too little information should be tendered.

Field agents, as a rule, discuss proposed reports freely with taxpayers. When examination has been by an agent under immediate supervision of the revenue agent in charge of a district, the taxpayer is sent a copy of the report after it is reviewed by agent in charge. If examination is made by an agent directly from Washington, a copy of the report is not furnished the taxpayer. The assessment letter is first official notice to taxpayer of results of the examination.

Unnecessary Examinations.—

Law. Sec. 1309. That no taxpayer shall be subjected to unnecessary examinations or investigations, and only one inspection of a taxpayer's books of account shall be made for each taxable year unless the taxpayer requests otherwise or unless the Commissioner, after investigation, notifies the taxpayer in writing that an additional inspection is necessary.

Procedure when Audit Discloses Additional Taxes Due.—

Law. Sec. 250. . . . . (d) . . . . If upon examination of a return made under the Revenue Act of 1916, the Revenue Act of 1917, the Revenue Act of 1918, or this Act, a tax or a deficiency in tax is discovered, the taxpayer shall be notified thereof and given a period of not less than thirty days after such notice is sent by registered mail in which to file an appeal and show cause or reason why the tax or deficiency should not be paid. Opportunity for hearing shall be granted and a final decision thereon shall be made as quickly as practicable. Any tax or deficiency in tax then determined to be due shall be assessed and paid together with the penalty and interest, if any, applicable thereto, within ten days after notice and demand by the collector as hereinafter provided, and in such cases no claim in abatement of the amount so assessed shall be entertained: *Provided*, That in cases where the Commissioner believes that the collection of the amount due will be jeopardized by such delay he may make the assessment without giving such notice or awaiting the conclusion of such hearing. . . . .

Regulation. Sec. 250 (d) of the Revenue Act of 1921 provides that if upon examination of a return made under the Revenue Act of 1916, 1917, 1918, or 1921, an income or excess profits tax or a deficiency therein (which deficiency is defined in Section 250 (b) as meaning the difference, to the extent not covered by any credit due to the taxpayer under Section 252, between the amount of the tax already paid and that which should have been paid) is discovered the taxpayer shall be notified thereof and shall have the right of an appeal and a hearing before an assessment is made. As soon as practicable, therefore, after a return is filed, whether by the taxpayer or as provided in section 3176 Revised Statutes, as amended, it is examined and if a tax or a deficiency in tax is discovered, the taxpayer shall be notified thereof by registered mail and a period of not less than 30 days given the taxpayer in which to file an appeal to the Commissioner and show cause or reason why such tax or deficiency should not be paid. Full 30 days from the mailing (not the receipt) of such notice to file an appeal shall be given the taxpayer. The appeal must be filed in the office of the Commissioner in Washington within 31 days from the mailing of the notice, but if it is mailed in time to be received by the Commissioner within such period in the ordinary course of the mails it will be considered as having been filed within such period. No particular form of appeal is required, but the appeal must set forth specifically the exceptions upon which it is taken. The appeal shall be under oath and must contain a statement that it is not taken for the purpose of delay. The facts and grounds upon which the taxpayer relies in connection with his appeal must be fully stated.

Upon the receipt of the appeal and before it is made the subject of a hearing by the agency designated by the Commissioner to hear such appeal, the appeal will be

referred to the income tax unit in Washington, or to the division thereof where such proposed assessment is being considered. The taxpayer may request a conference before the income tax unit to be held within a period prior to the expiration of five days after the time for the filing of an appeal. Five days prior to the expiration of the time allowed for a conference the taxpayer shall submit all data and briefs upon which he relies in connection with his appeal. If the income tax unit and the taxpayer are unable to reach an agreement respecting the amount of the proposed assessment, the appeal shall be transmitted to such agency as the Commissioner may designate for consideration and hearing. Opportunity for a hearing before the appeal agency shall be granted if requested within a reasonable time in accordance with the practice and procedure of such agency. The taxpayer in his appeal may rely upon data previously submitted, or he may obtain a reasonable extension of time, if cause therefor is shown, in which to file additional data, evidence or argument.

Such request shall be under oath and must state specifically the reasons for additional time.

In the case of a return which is examined in the collector's office where a tax or deficiency therein is discovered, the taxpayer will be notified thereof by registered mail and the same period given the taxpayer in which to file an appeal to the Commissioner and show cause or reason why such tax or deficiency should not be paid. Such appeal shall be filed in the manner prescribed above. The appeal will be referred to the collector's office where such proposed assessment is being considered. The procedure in connection with such appeal shall be the same as hereinbefore provided in the case of appeals from the decision of the income tax unit.

No assessment under section 250 (d) shall be made without notification to the taxpayer of his right to appeal and show cause, except that in any case where the Commissioner believes that the collection of the amount due will be jeopardized by delay, he may make the assessment without giving such notice or awaiting the conclusion of a hearing.

Where a taxpayer has been given an opportunity to appeal and has not done so, as above set forth, and an assessment has been made, or where a taxpayer has appealed and an assessment in accordance with the final decision on such appeal has been made, no claim in abatement of the assessment shall be entertained.

Where an assessment has been made without giving the taxpayer an opportunity to appeal or without awaiting a decision on an appeal that has been perfected, a bona fide claim in abatement of the assessment, filed within ten days after notice and demand by the collector, may be entertained. (Art. 1006, as amended by T. D. 3409, Nov. 13, 1922.)

STATEMENT WITH REPORT OF INSPECTOR--PRELIMINARY HEARING.—As a first step, not specifically provided for in the regulations, it is sometimes helpful, when an examination has developed points of dispute between taxpayer and revenue agent, to prepare a statement of relevant facts, furnish one copy to the revenue agent with a request that it be forwarded to the Treasury, and send another copy, with affidavit attached, to the personal or corporation audit department (as the case may be) of the Income Tax Unit at Washington. This is not an amended return, but merely insures full presentation of taxpayer's side of case for consideration by the audit section, which also has before it the report of the revenue agent. If taxpayer does not feel that his statement, unsupported by oral evidence, is sufficient, he may in the copy forwarded to Washington request a hearing and an opportunity to submit additional evidence should it appear to the audit section that an adverse report is likely. Usually, if such request is filed, taxpayer is granted a hearing in person or by attorney before additional tax is assessed against him. After the hearing a decision is made by the audit section from which the usual appeal can be taken.

NOTICE OF PROPOSED ASSESSMENT.—If the Commissioner's audit (which may or may not include consideration of taxpayer's statement and preliminary hearing outlined in preceding paragraph) indicates that an

additional assessment is justified, "the taxpayer shall be notified thereof and given a period of not less than thirty days after such notice is sent by registered mail in which to file an appeal and show cause or reason why the tax or deficiency should not be paid."[16]

Generally, an **assessment letter** is accompanied by a form asking taxpayer either to consent to the additional tax or to protest against it. If taxpayer consents to the assessment, he waives his rights to a hearing and appeal under Sec. 250 (d). These forms should not be signed without proper advice. Taypayers should also be sure that they understand what action has been taken on claims for refund, credit, or abatement which may be on file. Sometimes an assessment letter may show an overpayment, but when consideration is also given to a claim for abatement previously filed which has been rejected, the "overpayment" becomes merely a partial offset to a larger amount of additional tax.

PROTEST AND APPEAL.—All communications from the Commissioner regarding additional assessments should receive prompt attention. In many cases, especially where the amount involved is very large, it is not possible to file a complete brief taking up in detail the proposed assessment. In such cases, it should be sufficient, as is contemplated by Art. 1006, to file the formal appeal, setting forth the items which will be contested and the general reasons why the tax should not be paid. These reasons should be specific enough to enable the Treasury to decide whether or not the contentions are meritorious.

Taxpayers should request reasonable extensions of time in which to prepare properly the details of their cases. In complicated cases an oral hearing should be requested, since the questions involved are of the same nature as in litigated cases.

Form of Appeal.—An appeal must be in affidavit form and contain a statement that it is not taken for the purpose of delay. These are the only requirements set forth in the regulations. The form shown on p. 1567 may be used in most cases.

PROCEDURE UPON ASSESSMENT.—After final decisions are made, or if appeals are not made within specified time, the proposed assessments are included in next list sent to collector by the Commissioner. Upon receipt of lists, collector issues notice and demand for payment as soon as possible. The tax must be paid within 10 days after notice and demand. The collector cannot accept a claim in abatement. If taxpayer still wishes to contest assessment, a claim for refund may be filed immediately after payment is made—a procedure necessary in order to file suit. Under all circumstances payments should be made **under protest.**

TIME LIMITS ON SUMMARY ASSESSMENTS.—

Law. Sec. 250. . . . . (d) The amount of income, excess-profits, or war-profits taxes due under any return made under this Act for the taxable year 1921 or succeeding taxable years shall be determined and assessed by the Commissioner within four years after the return was filed, and the amount of any such taxes due under any return made under this Act for prior taxable years or under prior income, excess-profits, or war-profits tax Acts, or under section 38 of the Act entitled "An Act to provide revenue, equalize duties, and encourage the industries of the United States, and for other purposes," approved August 5, 1909, shall be determined and assessed within five years after the return was filed, unless both the Commissioner and the taxpayer consent in writing to a later determination, assessment, and collection of the tax; and no suit or proceeding for the collection of any such taxes due under this Act or under prior income,

[16] Sec. 250 (d).

TREASURY DEPARTMENT

BUREAU OF INTERNAL REVENUE

IN THE MATTER OF JOHN SMITH & CO., INC. } APPEAL

TO THE COMMISSIONER OF INTERNAL REVENUE:

The above named taxpayer is in receipt of a registered letter, dated . . . ., advising it that it has been decided that a proposed additional income tax of $. . . . . ., for the years . . . ., will be assessed after the expiration of thirty days unless an appeal is filed within that time.

Accordingly an appeal is hereby taken from such decision, which it is understood was rendered by the . . . . (Division, Subdivision or Section, as the case may be) of the Income Tax Unit.

STATEMENT OF FACTS

. . . .

EXCEPTION No. I

THE TAXPAYER TAKES EXCEPTION TO THE INCOME TAX UNIT'S REDUCTION OF THE DEPRECIATION RATE FOR MACHINERY AND EQUIPMENT FROM 10 PER CENT TO 7½ PER CENT.

The above taxpayer is engaged in manufacturing cotton goods. It has for the past six years, the period of its existence, depreciated machinery and equipment at the rate of 10 per cent per annum.

Proof has been submitted to show that, under the circumstances, 10 per cent per annum is a reasonable rate of depreciation.

EXCEPTION No. II

. . . .

EXCEPTION No. III

. . . .

CONCLUSION

. . . .

The taxpayer requests an oral hearing, and reserves the right to submit additional evidence and a supplementary brief.

This appeal is not taken for the purpose of delay.

Respectfully,

Dated. . . . . JOHN SMITH & CO., INC.

By . . . .

(Name of official)

STATE OF. . . . . } ss.
COUNTY OF. . . . . }

. . . . of full age, being duly sworn according to law, on his oath says that he is the. . . . . of the above named company, that the facts set forth in the foregoing appeal to the Commissioner of Internal Revenue are true to the best of deponent's knowledge and belief.

. . . .

(Name of official)

Subscribed and sworn to before me this. . . . . .day of. . . . . .192. .

. . . .

Notary Public

Specimen Appeal

excess-profits, or war-profits tax Acts, or of any taxes due under section 38 of such Act of August 5, 1909, shall be begun, after the expiration of five years after the date when such return was filed, but this shall not affect suits or proceedings begun at the time of the passage of this Act: *Provided*, That in the case of income received during the lifetime of a decedent, all taxes due thereon shall be determined and assessed by the Commissioner within one year after written reouest therefor by the executor, administrator, or other fiduciary representing the estate of such decedent: *Provided further*, That in the case of a false or fraudulent return with intent to evade tax, or of a failure to file a required return, the amount of tax due may be determined, assessed, and collected, and a suit or proceeding for the collection of such amount may be begun, at any time after it becomes due: *Provided further*, That in cases coming within the scope of paragraph (9) of subdivision (a) of section 214, or of paragraph (8) of subdivision (a) of section 234, or in cases of final settlement of losses and other deductions tentatively allowed by the Commissioner pending a determination of the exact amount deductible, the amount of tax or deficiency in tax due may be determined, assessed, and collected at any time; but prior to the assessment thereof the taxpayer shall be notified and given a period of not less than thirty days in which to file an appeal and be heard as hereinafter provided in this subdivision. . . . .

The tax must be both determined and assessed within limitation period.

Limitation Period 5 Years Under 1918 and Prior Laws.—The limitation period of the 1918 law is not disturbed, but in case of all acts prior to the 1918 law, the period is increased to 5 years by the 1921 law. Before this change, the government, notwithstanding that assessment could not be made, could bring suit at any time under laws prior to the 1918 act. The 1921 law provides that neither assessment nor suit under 1918 and prior laws shall be legal after the 5-year limitation period has expired.

Limitation Period 4 Years Under 1921 Law.—Any tax due under a return filed for the taxable year 1921, or any subsequent year, must be assessed within 4 years after the return was filed. If any tax is due under any return made under the 1921 law for prior taxable years, the assessment must be made within 5 years after the return was filed. The limitation period for taxes under the 1921 law is not the same for assessment and suit. Assessment must be made within 4 years and suit or proceedings must be instituted within 5 years after return is filed.

Limitation Period 1 Year in Case of Estates.—Sec. 250 (d) provides, "that in case of income received during the lifetime of a decedent, all taxes due thereon shall be determined and assessed by the Commissioner within one year after written request therefor by the executor, administrator, or other fiduciary representing the estate of such decedent." A request for determination must be made by the executor. Such an application should be rendered unnecessary by more expeditious handling of returns. This section does not apply to the income of the decedent's estate but only to that received by the decedent during his lifetime.

The 1-year period does not apply to suits. The government has 5 years after the return was filed within which to institute suit.

No Limitation Period in Case of False or Fraudulent Return.—Under the provisions of Sec. 250 (d) if a taxpayer files a false or fraudulent return with intent to evade tax, or has failed to file a required return, an assessment may be made or suit instituted at any time.

Limitation Period Where Amortization Is Claimed or Deductions Are Tentatively Allowed.—The last proviso of Sec. 250 (d) is of especial importance to taxpayers who have filed amortization claims. It appears that if amortization has been claimed or if the Commissioner has tentatively allowed a deduction, the Commissioner may reopen the case to make an

assessment or bring suit at any time. The assessment or suit must be confined to amortization or to the deduction tentatively allowed. The other limitation periods of Sec. 250 (d) apply to other items of the return.

Law. Sec. 214. (a) . . . . (9) . . . . At any time before March 3, 1924, the Commissioner may, and at the request of the taxpayer shall, reexamine the returns and if he then finds as a result of an appraisal or from other evidence that the deduction originally allowed was incorrect, the income, war-profits, and excess-profits taxes for the year or years affected shall be redetermined; and the amount of tax due upon such redetermination, if any, shall be paid upon notice and demand by the collector, or the amount of tax overpaid, if any, shall be credited or refunded to the taxpayer in accordance with the provisions of section 252; . . . .

The rule of law is that a specific section controls a general section. It might be thought that each section is specific. A careful reading shows, however, that Sec. 214 is specific with reference to the deduction for amortization, whereas Sec. 250 is specific with reference to limitation. Should the courts hold that Sec. 214 governs Sec. 250, the Commissioner would have to complete all re-examinations of amortization claims before Mar. 3, 1924, but could make an assessment or bring suit thereon at any time thereafter.

Limitation Period may be Extended by Agreement.—A provision included in Sec. 250 (d) makes it possible to extend the time limit on assessments by consent of Commissioner and taxpayer.

No Limitation Period for Examination of Books.—There is no time limit on the right of the Commissioner or collectors to examine the books of a taxpayer, but under the 1921 law[17] no tax can be assessed by the government after 4 years from filing of return (excepting with consent of the taxpayer) unless fraud is alleged.[18]

PROCEDURE WHEN TAX IS IN JEOPARDY.—Sec. 250 (d) quoted on p. 1566, provides that in cases where the Commissioner believes that collection of tax will be jeopardized by delay due to appeal, he may make the assessment without giving notice or awaiting the conclusion of a final hearing. In such a case, if the collector will accept it, claim for abatement may be filed. If claim is accepted, collector will no doubt require a bond or security. Merits of the case would then be fought out under a claim in abatement. If collector refuses to accept a claim in abatement, tax must be paid and a claim for refund filed.

Ruling. The probable run of the statute of limitations against the Government as a result of which it would be precluded from bringing suit or proceedings against the taxpayer constitutes jeopardy within the meaning of section 250 (d) of the Revenue Act of 1921 and under such circumstances the Commissioner may assess the tax without giving the notice or awaiting the conclusions of the hearing provided for in said section. (C. B. I–1, p. 305; I. T. 1333.)

WHERE TAXPAYER HAS NOT BEEN PROPERLY NOTIFIED.—Sec. 250 (d) specifically provides that in the case of an additional assessment " . . . . the taxpayer shall be notified thereof and given a period of not less than thirty days after such notice is sent by registered mail in which to file an appeal. . . . . Opportunity for hearing shall be granted and a final decision thereon shall be made as quickly as practicable. . . . ."

The foregoing section applies to the 1916, 1917, 1918, and 1921 laws.

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[17] Sec. 250 (d).

[18] Sec. 250 (d) also provides that the assessment must be made within 5 years, for taxes applicable to years prior to 1921.

Therefore, any assessment made after Nov. 23, 1921, the date of enactment of the 1921 law, is illegal if the above section has not been followed.[19]

ADDITIONAL ASSESSMENTS BEAR INTEREST.—The assessment bears interest from date tax was due.

Law. Sec. 250. . . . . (b) . . . . If the amount already paid is less than that which should have been paid, the difference, to the extent not covered by any credits due to the taxpayer under section 252 (hereinafter called "deficiency"), together with interest thereon at the rate of one-half of 1 per centum per month from the time the tax was due (or, if paid on the installment basis, on the deficiency of each installment from the time the installment was due), shall be paid upon notice and demand by the collector. . . . .

The foregoing provision applies only to returns for 1921 and subsequent years.

ASSESSMENT WHEN CONSOLIDATION RETURNS ARE FILED.—

Law. Sec. 240. . . . . (b) In any case in which a tax is assessed upon the basis of a consolidated return, the total tax shall be computed in the first instance as a unit and shall then be assessed upon the respective affiliated corporations in such proportions as may be agreed upon among them, or, in the absence of any such agreement, then on the basis of the net income properly assignable to each. There shall be allowed in computing the income tax only one specific credit computed as provided in subdivision (b) of section 236.

The foregoing formula for apportionment of taxes is modified in the case of consolidated returns for 1917 filed by corporations and partnerships, thus:

Ruling. It is held, therefore, that where corporations and partnerships are consolidated the excess profits tax should be allocated to the partnerships as a group according to the invested capital and net income assignable to the partnership group. After the proper amount of the excess profits tax has been allocated to the partnership group, article 78 may then be applied within the partnership group as it is now applied within the corporation group. (C. B. I–1, p. 295; L. O. 1083.)

FINAL DETERMINATION AND ASSESSMENT.—The law provides that a case, under certain conditions, may be finally determined, thus overcoming the uncertainty which has heretofore existed as to when a tax case was actually closed.

Law. Sec. 1312. That if after a determination and assessment in any case the taxpayer has without protest paid in whole any tax or penalty, or accepted any abatement, credit, or refund based on such determination and assessment, and an agreement is made in writing between the taxpayer and the Commissioner, with the approval of the Secretary, that such determination and assessment shall be final and conclusive, then (except upon a showing of fraud or malfeasance or misrepresentation of fact materially affecting the determination or assessment thus made) (1) the case shall not be reopened or the determination and assessment modified by any officer, employee, or agent of the United States, and (2) no suit, action, or proceeding to annul, modify, or set aside such determination or assessment shall be entertained by any court of the United States.

To bring about such a **final determination,** there must be (1) an agreement in writing between the taxpayer and the Commissioner, and (2) the agreement must be approved by the Secretary of the Treasury. In case of a corporation a certified copy of the minutes of the board of directors authorizing an officer to sign the agreement must be filed with the Treasury. The agreement should be executed in duplicate. (See Art. 1141.)

When taxpayers wish to enter into an agreement under Sec. 1312, a formal request should be addressed to the Commissioner.

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[19] The Treasury has ruled that where an assessment was made prior to this date the taxpayer is not entitled to the benefit of this provision. (C. B. I–1, p. 305; I. T. 1200.)

Ruling. In connection with the closing of cases under section 1312 taxpayers are required to obtain a statement from the local collector of internal revenue showing the amount of taxes paid for the period to be closed by the agreement. This requirement has been made in the interest of expeditious action on taxpayers' requests for agreements in view of the fact that the Bureau is not in possession of the record as to payments, this matter being recorded only in the offices of the local collectors. The taxpayer is usually in the possession of complete data as to the total payments made by years and by tabulating them in such manner as to permit the collector's office to verify them promptly the entire proceeding is very materially expedited. (I-33-460; I. T. 1421.)

Forms of Agreement Between Commissioner and Taxpayer.—An agreement may be made under the following conditions:

1. Where an assessment has been paid without protest.
2. Where an assessment has been made and the Commissioner has abated the tax in part or in full.
3. Where an assessment has been made and the Commissioner has credited the tax in part or in full.
4. Where the Commissioner has allowed a refund.

Case 1 is covered by **Form A.**

THIS AGREEMENT, made this ....day of.................. ...., 19 , under and in pursuance of Section 1312 of the Revenue Act of 1921, by and between...... ....

a taxpayer residing at.......having its principal office or place of business at ....

and the COMMISSIONER OF INTERNAL REVENUE, with the approval of the SECRETARY OF THE TREASURY:

WHEREAS, There has been a determination and assessment of. ....(\$......) as the amount of tax .. .. .penalt... ....due the United States of America from said taxpayer on account of.......... . ... and,

WHEREAS, said taxpayer has without protest paid in whole the amount of tax.... .....penalt......... ...so determined and assessed.

NOW, THIS AGREEMENT WITNESSETH: That said taxpayer and said COMMISSIONER OF INTERNAL REVENUE, with the approval of the SECRETARY OF THE TREASURY, hereby mutually agree that such determination and assessment shall be final and conclusive.

IN TESTIMONY WHEREOF, the parties to these presents have hereunto set their hands and seals the day and year first above written.

....
TAXPAYER

Signed, sealed and delivered in the presence of:

By..
....
COMMISSIONER

....
....

APPROVED:
....
SECRETARY

(Note. Strike out inapplicable language.)

FORM "A" (734M)

Case 2 is covered by **Form B,** which is the same as Form A except immediately after colon at end of first paragraph there should be substituted:

. . . .

WHEREAS, on or about the. . . . . .day of. . . . ., 19. ., there was assessed against the taxpayer the sum of. . . . .($. . . . . . .), as the amount of tax. . . . . .penalt. . . . . .due the United States of America from the taxpayer on account of. . . . ., and,

WHEREAS, There has been a determination by the Commissioner that the sum of. . . . .($. . . . .) is the correct amount of tax . . . . .penalt. . . . . .due the United States of America from the taxpayer on account of said. . . . ., and,

WHEREAS, The Commissioner has made an abatement, based on such determination and such assessment, of the sum of. . . . .($. . . . . .) and the taxpayer has accepted such abatement;

NOW, THIS AGREEMENT WITNESSETH: That the taxpayer and the COMMISSIONER OF INTERNAL REVENUE, with the approval of the SECRETARY OF THE TREASURY, hereby mutually agree that such determination of the sum of. . . . . ($. . . . . .) as the correct amount of tax. . . . . .penalt. . . . . .due from the taxpayer on account of said . . . . and such assessment as abated in accordance with such determination, shall be final and conclusive.

IN TESTIMONY WHEREOF . . . .

FORM "B" (735M)

Case 3 is covered by **Form C,** which is the same as Form A except immediately after colon at end of first paragraph there should be substituted:

. . . .

WHEREAS, on or about the. . . . . .day of . . . ., 19. ., there was assessed against the taxpayer the sum of. . . . . ($ . . . .) as the amount of tax. . . . . due the United States of America from the taxpayer on account of. . . . ., and,

WHEREAS, the taxpayer, pursuant to such assessment, on or about the. . . . . .day of. . . . ., 19. ., paid the sum of. . . . . ($. . . . .) as tax. . . . . .due the United States of America on account of said . . . ., and,

WHEREAS, there has been a determination by the Commissioner that the sum of. . . . .($. . . . .) is the correct amount for which the taxpayer was liable on account of said. . . . ., and,

WHEREAS, the Commissioner has made a credit, based on such determination and such assessment, of the sum of. . . . . ($. . . . .) against tax. . . . . .due from the taxpayer on account of. . . . . and the taxpayer has accepted such credit;

NOW, THIS AGREEMENT WITNESSETH: That the taxpayer and the COMMISSIONER OF INTERNAL REVENUE, with the approval of the SECRETARY OF THE TREASURY, hereby mutually agree that such determination of the sum of. . . . . ($. . . . .) as the correct amount of tax. . . . . for which the taxpayer was liable on account of said. . . . . and such assessment as reduced by the amount credited as aforesaid, shall be final and conclusive.

IN TESTIMONY WHEREOF . . . .

FORM "C" (736M)

Case 4 is covered by **Form D,** which is the same as Form A except immediately after colon at end of first paragraph there should be substituted:

. . . .

WHEREAS, on or about the . . . . day of . . . . , 19. ., there was assessed against the taxpayer the sum of . . . . ($. . . . . .), as the amount of tax . . . . penalt . . . . due the United States of America from the taxpayer on account of . . . . , and,

WHEREAS, the taxpayer, pursuant to such assessment, on or about the . . . . day of . . . . , 19. ., paid the sum of . . . . ($. . . . .) as tax . . . . . penalt . . . . due the United States of America on account of said . . . . , and,

WHEREAS, There has been a determination by the Commissioner that the sum of . . . . ($. . . . . .) is the correct amount for which the taxpayer was liable on account of said . . . . , and,

WHEREAS, The Commissioner has made a refund, based on such determination and such assessment, of the sum of . . . . ($. . . . . .), and the taxpayer has accepted such refund;

NOW, THIS AGREEMENT WITNESSETH: That the taxpayer and the COMMISSIONER OF INTERNAL REVENUE, with the approval of the SECRETARY OF THE TREASURY, hereby mutually agree that such determination of the sum of . . . . ($ . . . .) as the correct amount of tax . . . . penalt . for which the taxpayer was liable on account of said . . . . and such assessment as reduced by the amount refunded as aforesaid, shall be final and conclusive.

IN TESTIMONY WHEREOF . . . . .

FORM "D" (737M)

FINAL DETERMINATION OF CLAIMS.—

Law. Sec. 1313. That in the absence of fraud or mistake in mathematical calculation, the finding of facts in and the decision of the Commissioner upon (or in case the Secretary is authorized to approve the same, then after such approval) the merits of any claim presented under or authorized by the internal-revenue laws shall not be subject to review by any other administrative officer, employee, or agent of the United States.

It is possible, notwithstanding the heading, that Congress intended this section to apply only to claims filed by the taxpayer. Sec. 1312 is confined, to a "determination and assessment in any case the taxpayer has without protest paid in whole any tax . . . . or accepted any abatement, credit, or refund based on such determination and assessment." It is possible that Sec. 1312 is intended to apply to cases initiated by the government, and Sec. 1313 to cases initiated by the taxpayer.

WHEN MAY CASE BE REOPENED?—The following decision[20] is of interest in connection with cases which have been closed under laws prior to the 1921 law. It is also of interest in connection with Secs. 1312 and 1313. The courts will no doubt insist upon a strict application of these sections.

[20] *Penrose* v. *Skinner*, 278 Fed. 284.

Decision. . . . . No authority has been vested in a commissioner to overrule and reverse the action of his predecessor in office. Commissioner Osborne, acting under his authority, heard and determined a question of fact necessary to enable him to act intelligently in ascertaining and determining the amount of plaintiff's net income on which he would be required to make the levy and assessment, and his finding on that issue not having been impeached by the answer should, under every principle and rule of law, be regarded here as final. . . . .

There is no doubt that an allowance by the Commissioner may be impeached anywhere for fraud, for that avoids all contracts into which it enters as against the party defrauded; or for want of jurisdiction, or for a mistake apparent upon the certificate of allowance; or generally for such other irregularities in the proceedings as would avoid an award made by arbitration so far as the proceedings are similar; but not for what might seem to others to be a mere mistake of judgment in the weighing and giving force and effect to evidence.

PROCEDURE TO REOPEN A CASE.—The following ruling applies to cases which have been finally settled by the Treasury. It does not apply to cases closed under Secs. 1312 and 1313 of the 1921 law.

Ruling. Where any case in the Bureau of Internal Revenue has been finally closed after the taxpayer, or other party thereto, has had a hearing or has been afforded by written notice an opportunity to present oral or written arguments or statements of fact in support of his contentions, the case will not be reopened except (1) where a showing is made of new and material facts, accompanied by an explanation, satisfactory to the Commissioner of Internal Revenue, of the failure to produce such facts prior to the closing of the case, or (2) where the case is materially affected by the change of regulations or by the final decision of another case either by the Commissioner of Internal Revenue or by a court of competent jurisdiction. The application for reopening a case should be addressed to the Commissioner of Internal Revenue, should state succinctly the facts and circumstances upon which the application is based, and must be supported by the affidavit of a person having knowledge of the facts.

This decision is not to be construed as modifying the regulations relating to the filing of claims in abatement or claims for refund, nor as denying the right of a taxpayer to a hearing or to an appeal at any stage of his case until the case has been finally closed. After the taxpayer has exhausted his remedies within the Bureau, however, and the case has been finally closed, it will be reopened only under the conditions stated in the decision. (C. B. 5, p. 313; T. D. 3240.)

Procedure in Cases Arising Prior to T. D. 3269.—Prior to the passage of the 1921 law (Nov. 23, 1921) and issuance of T. D. 3269,[21] it was contrary to the policy of the Treasury to permit an appeal to Committee before assessment. That is, a proposed assessment was not withheld pending an appeal. Consequently, there are now many cases pending before the Committee on Appeals and Review. There are others which have been assessed and formal appeal not yet made. The present procedure should not affect any of these cases.

Taxpayers were advised to file claims in abatement pending an appeal,[22] and collectors should be notified by the Secretary of the Treasury to postpone any action looking to collection until final decisions by the Committee are handed down.

CLAIMS PROCEDURE.—The procedure of the Treasury should provide for an orderly appeal to the Commissioner in cases where the Unit has ruled adversely on a claim for abatement, refund or credit.

In view of the provisions of the 1921 law, all decisions of the Unit should be sent to taxpayers and their right to dissent and appeal made clear.

A rule should be made that taxpayers be notified by letter that the Unit has rejected their claims and that they have, say, 30 days, to give notice of

[21] This T. D. was incorporated in Art. 1006 as originally issued.
[22] C. B. 3, p. 370; O. D. 709

appeal to the Commissioner. If notice of appeal is not filed, collectors may reasonably demand payment in case of rejected claims for abatement or credit. Until such a rule is promulgated, taxpayers should notify the Treasury when claims are filed that if the decision of the Unit is adverse, right of appeal to the Commissioner is requested before the claims are formally rejected.

CONTEMPLATED EVASION.—

Law. Sec. 250. . . . . (g) If the Commissioner finds that a taxpayer designs quickly to depart from the United States or to remove his property therefrom, or to conceal himself or his property therein, or to do any other act tending to prejudice or to render wholly or partly ineffectual proceedings to collect the tax for the taxable year then last past or the taxable year then current unless such proceedings be brought without delay, the Commissioner shall declare the taxable period for such taxpayer immediately terminated and shall cause notice of such finding and declaration to be given the taxpayer, together with a demand for immediate payment of the tax for the taxable period so declared terminated and of the tax for the preceding taxable year or so much of said tax as is unpaid, whether or not the time otherwise allowed by law for filing return and paying the tax has expired; and such taxes shall thereupon become immediately due and payable. In any action or suit brought to enforce payment of taxes made due and payable by virtue of the provisions of this subdivision the finding of the Commissioner, made as herein provided, whether made after notice to the taxpayer or not, shall be for all purposes presumptive evidence of the taxpayer's design. A taxpayer who is not in default in making any return or paying income, war-profits, or excess-profits tax under any Act of Congress may furnish to the United States, under regulations to be prescribed by the Commissioner with the approval of the Secretary, security approved by the Commissioner that he will duly make the return next thereafter required to be filed and pay the tax next thereafter required to be paid. The Commissioner may approve and accept in like manner security for return and payment of taxes made due and payable by virtue of the provisions of this subdivision, provided the taxpayer has paid in full all other income, war-profits, or excess-profits taxes due from him under any Act of Congress. If security is approved and accepted pursuant to the provisions of this subdivision and such further or other security with respect to the tax or taxes covered thereby is given as the Commissioner shall from time to time find necessary and require, payment of such taxes shall not be enforced by any proceedings under the provisions of this subdivision prior to the expiration of the time otherwise allowed for paying such respective taxes.[23] In the case of a citizen of the United States about to depart from the United States the Commissioner may, at his discretion, waive any or all of the requirements placed on the taxpayer by this subdivision. No alien shall depart from the United States unless he first secures from the collector or agent in charge a certificate that he has complied with all the obligations imposed upon him by the income, war-profits, and excess-profits tax laws. If a taxpayer violates or attempts to violate this subdivision there shall, in addition to all other penalties, be added as part of the tax 25 per centum of the total amount of the tax or deficiency in the tax, together with interest at the rate of 1 per centum per month from the time the tax became due. . . . .

Persons Going Abroad Must Present Certificates of Compliance.—

Ruling. In order to obtain income tax clearance, American citizens planning to leave the United States are required to present their certificates of compliance or receipts showing payment of income tax, at the office of the internal revenue agent in charge at the port of embarkation, rather than to the internal revenue agent at the pier. (C. B. 3, p. 301; O. D. 666.)

This ruling was issued under the 1918 law. The present law gives the Commissioner power to waive this requirement as to citizens of the United States and it is waived. Aliens departing from the United States must present evidence that they have satisfied their income tax obligations. The Internal Revenue officers cannot investigate the status of an alien as resident

[23] The portion of this subdivision following this point was added to the provision of the 1918 law.

or non-resident before sailing. Many aliens when leaving the United States are classed as non-residents. Often residents are erroneously classed as non-residents, in which case claims for refund may be filed after the aliens return.

Payment of Tax

PAYMENT IN INSTALMENTS.—The law permits the taxpayer either to divide his tax into four instalments, spread evenly throughout the year, or to pay it in a lump sum at time of filing return.

Law. Sec. 250. (a) That except as otherwise provided in this section and sections 221 and 237 [payment at the source] the tax shall be paid in four installments, each consisting of one-fourth of the total amount of the tax. The first installment shall be paid at the time fixed by law for filing the return,[24] and the second installment shall be paid on the fifteenth day of the third month, the third installment on the fifteenth day of the sixth month, and the fourth installment on the fifteenth day of the ninth month, after the time fixed by law for filing the return. Where an extension of time for filing a return is granted the time for payment of the first installment shall be postponed until the date of the expiration of the period of the extension, but the time for payment of the other installments shall not be postponed unless the Commissioner so provides in granting the extension. In any case in which the time for the payment of any installment is at the request of the taxpayer thus postponed, there shall be added as a part of such installment interest thereon at the rate of ½ of 1 per centum per month from the time it would have been due if no extension had been granted, until paid. If any installment is not paid when due, the whole amount of the tax unpaid shall become due and payable upon notice and demand by the collector.

The tax may at the option of the taxpayer be paid in a single payment instead of in installments, in which case the total amount shall be paid on or before the time fixed by law for filing the return, or, where an extension of time for filing the return has been granted, on or before expiration of the period of such extension.

It should be noted that the extension of time for filing the return ordinarily operates to extend the time of payment of the first instalment only.

Ruling. Where an understatement of the tax in a return is not attributable to negligence or fraud and a taxpayer accordingly fails to pay at least one quarter of the tax due at the time for filing the return, he does not lose his right to make installment payments. (C. B. 4, p. 317; Digest O. D. 961.)

NOTICE OF PAYMENT DUE.—The law states that the tax "shall be paid" at dates fixed by Sec. 250 (a) quoted above, but penalties cannot be imposed until notice and demand has been made in accordance with the following:

Law. Sec. 250. . . . . (e) . . . . In the case of the first installment provided for in subdivision (a) the instructions printed on the return shall be sufficient notice of the date when the tax is due and sufficient demand, and the taxpayer's computation of the tax on the return shall be sufficient notice of the amount due. In the case of each subsequent installment the collector may, within thirty days and not later than ten days before the installment becomes due, mail to the taxpayer notice of the amount of the installment and the date on which it is due for payment. Such notice of the collector shall be sufficient notice and sufficient demand under this section. . . . .

Subdivision (h) of this section makes this change retroactive with respect to the 1917 and 1918 laws.

If taxpayers wait for notice from collector on second and third installments, they run the risk of being called upon to pay all the remaining installments at once, for subdivision (a) of Sec. 250, which fixes the dates when

[24] The 15th day of the 3rd month following the close of the taxable year—Mar. 15 in case the calendar year is used.

the instalments must be paid, provides that "if any instalment is not paid when due, the whole amount of the tax unpaid shall become due and payable upon notice and demand by the collector." In case of the fourth instalment taxpayers can postpone payment until they receive notice in accordance with Sec. 250 (e) without incurring this risk. In no case can penalty or interest be assessed until proper notice has been given.

Additional Notice in Cases of Absence.—In special cases where, for causes such as absence, there is delay in receiving mail, additional time is allowed.

Regulation. . . . . By reason, however, of the absence from home or place of business in a foreign country or in the military or other service of the country and the consequent delay in receiving mail, or by reason of the location of the residence of an individual or of the office of a corporation to which the notice was addressed at a distance from the collector's office, it is frequently impossible for a taxpayer to receive notice and demand and to make payment of the tax so that such payment may be received by the collector within the 10-day period (following the service of notice and demand). In all such cases the collector will enter on the notice as the date on which the tax becomes due and payable a date as nearly as possible 10 days after the time that the notice should be received in the ordinary course of the mails by the taxpayer. In such cases where it is established that a remittance for the tax was placed in the mails within the 10-day period after the due date specified in the notice, and tardiness was occasioned because the notice was not delivered in due time by reason of delay in the mail and satisfactory evidence of that fact is furnished, the penalty and interest will not be collected. (Art. 1007.)

Ruling. A taxpayer having filed his return and paid the first installment of tax is aware of his liability to pay the balance of the tax on the respective due dates, and failure to receive notice and demand for the payment of the later installments by reason of his absence from this country does not constitute a sufficient cause for waiving the penalty and interest on any installment of the tax not paid when due. (C. B. 2, p. 236; O. D. 408.)

Notice Required in All Cases.—The law binds Commissioner and collectors to give ample notice of all proceedings, including imposition of penalties. Notices must allow sufficient time to the taxpayer to produce evidence supporting his original returns, or to pay within the statutory time of 10 days after formal demand.

CALCULATING INTEREST.—

Ruling. (a) Where interest is collectible at the rate of 1 per cent per month from the due date interest must be collected for the fractional part of a month where the tax is not paid within 10 days from notice and demand for payment.

(b) Under sections 502, 504, 629, 903, and 905,[25] interest is collectible at the rate of 1 per cent for each full month, and fractional parts of a month must be disregarded.

(c) Interest is collectible from the month tax becomes due. (C. B. 1, p. 244; O. 884.)

WHEN A CORPORATION LIQUIDATES.—

Regulation.[26] A corporation going into liquidation during any taxable year may upon the completion of such liquidation prepare a return covering its income for the fractional part of the year during which it was engaged in business and may file immediately such return with the collector. . . . .

When a corporation is dissolved, its affairs are usually wound up by a receiver or trustees in dissolution. The corporate existence is continued for the purpose of liquidating the assets and paying the debts, and such receiver or trustees stand in the stead of the corporation for such purposes. Any sales of property by them are to be treated

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[25] Sec. 502 relates to taxes due on transportation and telegraph, etc., service; section 504, to taxes due on insurance policies issued; section 629, to taxes due on soft drinks; sections 903 and 905, to taxes due on luxuries.

In the detailed ruling by the Treasury, it is stated: "Heretofore this office has held repeatedly that no interest for a fraction of a month shall be demanded."

[26] See C. B. 4, p. 279; O. D. 821.

as if made by the corporation for the purpose of ascertaining the gain or loss. . . . (Reg. 62, 1922, Art. 548.)

Rulings. Where a corporation dissolves and distributes all of its assets prior to the time the list carrying an assessment of additional tax against the corporation comes into the hands of the collector, the tax is not collectible upon notice and demand followed by distraint, but may be recovered only by means of a suit instituted against the stockholders or other persons who may have received the corporation's assets, except bona fide purchasers for a valuable consideration and creditors. (C. B. 4, p. 324; O. D. 769.)

Where a corporation dissolves and disposes of its assets without making provision for the payment of its accrued Federal income tax liability for the tax follows the assets so distributed, and upon failure to secure the unpaid amount suit to collect the tax should be instituted against the stockholders and other persons receiving the property, except bona fide purchasers for a valuable consideration. The penalties prescribed in section 253 of the Revenue Act of 1918 will attach to the principal officers of the corporation upon failure to comply with the provisions of that section. (C. B. 3, p. 300; O. D. 597.)

Receivers Personally Responsible—When? In *Pennsylvania Cement Company* v. *Bradley Contracting Company* (274 Fed. 1003), receivers were directed not to declare a dividend to creditors before federal taxes had been adjusted, because they could be held personally responsible for the taxes under Secs. 3466 and 3467 of the Revised Statutes.

WHEN DELINQUENT ASSESSMENT PAYABLE.—

Law. Sec. 250. . . . . (c) If the return is made pursuant to section 3176[27] of the Revised Statutes as amended, the amount of tax determined to be due under such return shall be paid upon notice and demand by the collector.

The tax levied by collectors must be paid if (after an appeal to the Commissioner) the assessment is confirmed, even if, in opinion of taxpayer, it is in error. The U. S. Supreme Court has held that Congress has afforded a complete and adequate remedy at law open to all persons aggrieved by collection of an erroneous or illegal revenue tax, and that taxpayer must pay the tax and may then bring an action to recover it after appeal.

MEDIA OF PAYMENT.—

Payment May Be Made by Mailing Uncertified Checks.—Taxes may be paid to the collector by check and should be mailed at least a day or two before date fixed for payment. During the last few days of the payment period many taxpayers pay in person at the offices of the collectors. This causes congestion and delays. Use of mails is preferable and on the whole trustworthy.

The law[28] authorizes collectors of internal revenue to accept uncertified checks in payment of income and excess profits taxes.[29] Checks should be made payable to "Collector of Internal Revenue at (City), (State)" and be made collectible at par without deduction for exchange.

Ruling. A taxpayer who tenders a check whether certified or uncertified in payment for taxes is not released from his obligation until the check is paid. Where such a check is lost in the mails a Collector of Internal Revenue is not required, as a condition precedent to the issuing of a duplicate check by a taxpayer, to furnish bond indemnifying him against possible loss in connection with the first check. (C. B. 3, p. 371; O. D. 626.)

Payments in Treasury Notes or Certificates of Indebtedness.—

Law. Sec. 1325. That collectors may receive, at par with an adjustment for accrued interest, notes or certificates of indebtedness issued by the United States . . . . in payment of income, war-profits and excess-profits taxes and any other taxes payable other than by stamp, ...

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[27] Sec. 3176 deals with the subject of false and fraudulent returns.
[28] Sec. 1325. See also Art. 1733.
[29] [Former Procedure]. The 1917 law (Sec. 1010) was the first to authorize collectors to accept uncertified checks in payment of taxes. (See T. D. 2627, 2666.)

Purchase of certificates of indebtedness affords a sound method of providing in advance for taxes. They may be purchased at par, and bear interest at a fair rate. They mature at various dates. Taxpayers can accumulate the certificates, as funds are available, at any time before tax payments are due and on due dates present them with the tax bills. In the meantime interest accrues.

EXTENDING DATE OF PAYMENT.—The law permits the Commissioner, under certain conditions, to extend date of payment of additional assessments.

Law. Sec. 250. . . . . (f) In the case of any deficiency (except where the deficiency is due to negligence or to fraud with intent to evade tax) where it is shown to the satisfaction of the Commissioner that the payment of such deficiency would result in undue hardship to the taxpayer, the Commissioner may, with the approval of the Secretary, extend the time for the payment of such deficiency or any part thereof for such period not in excess of eighteen months from the passage of this Act as the Commissioner may determine. In such case the Commissioner may require the taxpayer to furnish a bond with sufficient sureties conditioned upon the payment of the deficiency in accordance with the terms of the extension granted. There shall be added in lieu of other interest provided by law, as a part of such deficiency, interest thereon at the rate of two-thirds of 1 per centum per month from the time such extension is granted; except where such other interest provided by law is in excess of interest at the rate of two-thirds of 1 per centum per month. If the deficiency or any part thereof is not paid in accordance with the terms of the extension granted, there shall be added as part of the deficiency, in lieu of other interest and penalties provided by law, the sum of 5 per centum of the deficiency and interest on the deficiency at the rate of 1 per centum per month from the time it becomes payable in accordance with the terms of such extension.

Subdivision (h) of this section provides that the above shall also apply to any assessments which may be made under the 1917 and 1918 laws.

Regulation. . . . . The term "undue hardship" means more than an inconvenience to the taxpayer. It is defined as meaning that substantial financial loss or sacrifice will result to the taxpayer from making payments of the deficiency at the due date.

. . . . No extension of time may be granted under subdivision (f) of section 250 for the payment of any regular installment of tax due as shown by the original return of the taxpayer.

Any application for the extension must be made under oath on Form 1127 in accordance with instructions printed thereon and must be accompanied by evidence showing that undue hardship to the taxpayer would result if the extension were refused. The extension will not be granted on a general statement of hardship, but in each case there must be furnished a statement of the specific facts showing what, if any, financial loss or sacrifice will result if the extension is not granted. The application should, wherever practicable, contain a certified statement of assets and liabilities of the taxpayer.

The application, with the evidence, must be filed with the collector, who will at once transmit it to the Commissioner with his recommendations as to the extension. When it is received by the Commissioner it will be examined and within thirty days either rejected or tentatively approved.

Where the application is tentatively approved and a bond is required it must be filed with the collector within 10 days after the notification by the Commissioner that a bond is required. It shall be conditioned for the payment of the deficiency and applicable penalties, if any, and interest in accordance with the terms of the extension to be granted and shall be executed by a surety company holding a certificate of authority from the Secretary of the Treasury as an acceptable surety on Federal bonds and shall be subject to the approval of the Commissioner. In lieu of such a bond the taxpayer may file a bond secured by deposit of Liberty bonds or other bonds or notes of the United States equal in their total par value to the amount of the deficiency and applicable penalties, if any, and interest, as provided in section 1329 of the Revenue Act of 1921. (Art. 1014.)

If collectors insist on surety bonds in all cases, the "relief" will be barren because most taxpayers who cannot pay are also unable to comply with

the requirements of surety companies. If taxpayers are able to furnis bond, that fact should make the filing of bonds unnecessary. The Unite States has a first lien on the property of taxpayers and this is reasonabl protection. It is not fair to creditors whose claims are subordinate, tha surety bonds be demanded when taxpayers are unable to furnish them.

Rulings. A taxpayer protests against an additional assessment of tax for 1919 b filing a claim for abatement, and also requests an extension of time to make paymen under the provisions of section 250. Held, that where a taxpayer has not conceded th correctness of the tax assessed, a request for an extension of time to make paymen is not in order. (C. B. I-1, p. 311; I. T. 1290.)

Section 250 (f) of the Revenue Act of 1921 is applicable to deficiencies of income an excess profits tax under the Revenue Act of 1917 and the Revenue Act of 1918 not ye paid although assessment was made prior to November 23, 1921. (C. B. I-1, p. 31(I. T. 1199.)

. . . . Section 250 (f) is a relief provision and should be given a liberal rather tha a strict, construction. There is no element of bad faith present in connection with th returns of this company, nor is negligence to be imputed. It is believed that a deficienc in tax within the meaning of the Act appears as well in those cases where no tax wa shown by the face of the returns as in a case where less than the correct amount appears In the instant case the members of the corporation have undoubtedly reported in thei personal returns the profits of the M Company and have already paid a tax thereon Having in good faith reported as a personal service corporation, and the Bureau havin disallowed that classification and as a corporation found them subject to a certain tax the tax so found is believed to be a deficiency within the meaning of the Act and th Commissioner may in his discretion extend the time within which to make payment o the same. (I-32-453; I. T. 1417.)

RECEIPTS FOR TAXES PAID.—The law requires collectors to giv receipts only when requested to do so by taxpayers.

Law. Sec. 251. That every collector to whom any payment of any tax is made unde the provisions of this title shall upon request give to the person making such payment a full written or printed receipt, stating the amount paid and the particular account fo which such payment was made; and whenever any debtor pays taxes on account o payments made or to be made by him to separate creditors the collector shall, if requestec by such debtor, give a separate receipt for the tax paid on account of each creditor ir such form that the debtor can conveniently produce such receipts separately to his several creditors in satisfaction of their respective demands up to the amounts statec in the receipts; and such receipt shall be sufficient evidence in favor of such debtor to justify him in withholding from his next payment to his creditor the amount therein stated; but the creditor may, upon giving to his debtor a full written receipt acknowledging the payment to him of any sum actually paid and accepting the amount of tax paid as aforesaid (specifying the same) as a further satisfaction of the debt to that amount, require the surrender to him of such collector's receipt.

Ruling. . . . . Receipts are documents required by provisions of the internal revenue laws and by regulations made in pursuance thereof, within the meaning of section 3451 Rev. Stat., making it an offense to simulate or falsely or fraudulently execute or sign any document required by the internal revenue laws, or any regulation made in pursuance thereof, or to procure the same to be falsely or fraudulently executed, or to advise, aid in, or connive at such execution thereof. . . . .

The offense may be committed either where the receipt itself is a genuine receipt of the kind kept for that purpose in the office of the internal revenue collector but signed by the defendent without authority, or where, even if not a blank of the kind required to be kept, the blank itself is simulated or falsely or fraudulently executed and issued by a person who has no power or authority to do so. . . . . (T. D. 2874, June 23, 1919.)

Payment of Tax Under Protest

UNNECESSARY TO SUPPORT CLAIM FOR REFUND.—It is not necessary to pay under protest to secure a legal right to demand a refund

when it is believed that the tax has been erroneously assessed.[30] Sec. 3220 of Revised Statutes covers this point. The intention of the law is that no one shall be erroneously or excessively taxed. This intention is respected by the Commissioner of Internal Revenue.

FORM OF PAYMENT UNDER PROTEST.—In case of an additional assessment after examination, where facts upon which the government bases its claims are, in the opinion of taxpayer, unfounded and illegal when making the payment, a simple form of protest should be attached, e.g.:

I hereby protest against the assessment of the tax levied against me as evidenced in notice dated.........., on the ground that it is erroneous and illegal, and payment is hereby made solely to prevent the imposition of penalties threatened and the attachment of my property.

WHEN PAYMENT WAS MADE UNDER MISTAKEN TREASURY REGULATIONS.—It is not necessary to have paid under protest where a taxpayer prepared his returns in accordance with Treasury regulations, believing them to be correct, and, having been assessed thereon, paid the tax in due course.

PROOF OF INVOLUNTARY PAYMENTS REQUIRED IN CERTAIN ACTIONS AT LAW.—While involuntary payment need not be made under protest to secure a refund as provided by the act, in cases where recovery of taxes alleged to be illegally exacted is sought by an action at law, the federal courts have held that the claimant must show involuntary payment. In *City of Philadelphia* v. *Diehl, Collector*,[31] the U. S. Supreme Court said:

Decision. Where the party voluntarily pays the money, he is without remedy; but if he pays by compulsion of law, or under protest, or with notice that he intends to bring suit to test the validity of the claim, he may recover it back, if the assessment was erroneous or illegal, in an action for money had and received.

ARGUMENTS IN FAVOR OF PAYING UNDER PROTEST.— Although the Treasury states that a tax, if excessive, need not have been paid under protest to be recovered, certain cases indicate that a taxpayer should pay under protest to protect his right to sue for refund. The tendency is to waive formal protest.

In *Herold* v. *Kahn*,[32] the court said:

Decision. The proper administration of the fiscal affairs of the government, require that the payment of taxes should not be delayed by disputes as to their legality, but that the taxes should first be paid and all questions in regard to them be determined in suits brought for their refunding. It is a wise policy, therefore, that encourages the payment under protest of disputed taxes. Though there is some conflict in the dicta of the Supreme Court. we think that the true doctrine is that, when taxes are paid under protest that they are being illegally exacted, or with notice that the payer contends that they are illegal and intends to institute suit to compel their repayment, a sufficient foundation for such suit has been established.[33]

Actions to Restrain Payment of Taxes

If no claim for abatement is made, or if one is not permitted because a final decision has been made, or if claim is made and denied, the tax imposed must ordinarily be paid.

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[30] It is, however, always wise to do so because the taxpayer may wish to institute suit.
[31] 5 Wall. 720, 72 U. S. 720, 18 L. Ed. 614.
[32] 159 Fed. 608, 86 C. C. A. 598.
[33] The mandate was recalled and amended in 163 Fed. 947, 90 C. C. A. 307, so as to include interest from the date of the judgment of the District Court.

SUITS NOT MAINTAINABLE.—

Law. Sec. 3224. [Rev. Stat.] [Barnes' Federal Code, Sec. 5123.] No suit for the purpose of restraining the assessment or collection of any tax shall be maintained in any court.

Exceptional Cases.—The U. S. Supreme Court in a very recent case[34] says, however:

Decision. . . . . It has been held by this court, in *Dodge* v. *Brady*, 240 U. S. 122, 126, that Section 3224 of the Revised Statutes does not prevent an injunction in a case apparently within its terms in which some extraordinary and entirely exceptional circumstances make its provisions inapplicable. See also *Dodge* v. *Osborn*, 240 U. S. 118, 122. In the case before us, a sale of grain for future delivery without paying the tax will subject one to heavy criminal penalties. To pay the heavy tax on each of many daily transactions which occur in the ordinary business of a member of the exchange, and then sue to recover it back, would necessitate a multiplicity of suits and, indeed, would be impracticable. For the Board of Trade to refuse to apply for designation as a contract market, in order to test the validity of the act, would stop its 1600 members in a branch of their business most important to themselves and to the country. We think these exceptional and extraordinary circumstances with respect to the operation of this act make Section 3224 inapplicable. . . . .

STOCKHOLDERS' SUITS.—In cases where a speedy determination of the constitutionality of the tax is desirable, a procedure has been followed which appears to be a justifiable evasion of the statutory inhibition against litigating the validity of taxes before payment. This is done under color of a stockholder's suit, brought to restrain the corporation from an alleged illegal use of corporate assets. The right of a stockholder to maintain such a suit is well established.[35] The application of this procedure to tax cases was first resorted to in the *Income Tax Cases*,[36] and has been subsequently upheld as proper in view of the confusion and injustice which would result if the corporation paid the tax.[37]

Collection of Taxes by Suit and Summary Process

COLLECTION BY SUIT.—The government will not resort to an action at law if taxes can be collected by summary assessment followed by distraint on property of taxpayer. Taxpayers who have meritorious cases cannot be criticized for not signing waivers which may enable the government to force the collection of taxes illegally assessed. If the taxpayer agrees that the additional tax is due, the waivers should be signed, but not otherwise. Specific, not blanket waivers, should be signed. The law contains a limitation period both as to suits and assessments for all laws.

SUITS BARRED AFTER FIVE YEARS.—

Law. Sec. 1320. That no suit or proceeding for the collection of any internal revenue tax shall be begun after the expiration of five years from the time such tax was due, except in the case of fraud with intent to evade tax, or willful attempt in any manner to defeat or evade tax. This section shall not apply to suits or proceedings for the collection of taxes under section 250 of this Act, nor to suits or proceedings begun at the time of the passage of this Act.

The foregoing section applies to all internal revenue taxes. While included in the 1921 law, it covers all prior laws.

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[34] *Hill* v. *Wallace*, 66 L. Ed. 527 (Advance Opinions) decided May 15, 1922.

[35] *Dodge* v. *Woolsey*, 18 How. 331, 59 U. S. 331, 1 Miller 284, 15 L. Ed. 401; *Hawes* v. *Oakland*, 104 U. S. 450, 14 Otto 450, 26 L. Ed. 827. (See equity rule 94.)

[36] *Pollock* v. *Farmers' Loan & Trust Co.*, 157 U. S. 429, 39 L. Ed. 759.

[37] *Brushaber* v. *Union Pacific Ry. Co.*, 240 U. S. 1, 36 Sup. Ct. 236, 60 L. Ed. 493; *Stanton* v. *Baltic Mining Co.*, 240 U. S. 103, 36 Sup. Ct. 278, 60 L. Ed. 546.

COLLECTION BY DISTRAINT.—The following regulation summarizes Secs. 3187 and 3196 of the Revised Statutes which authorize collectors to collect taxes by distraint and sale:

Regulation. If any person liable to pay any taxes neglects or refuses to pay them within ten days after notice and demand, it shall be lawful for the collector or his deputy to collect such taxes with 5 per cent additional and interest at 12 per cent per annum by distraint and sale of the goods, chattels or effects, including stocks, securities, and evidences of debt, or other property or rights of property, of the person delinquent. When goods, chattels, or effects sufficient to satisfy the taxes and penalties imposed upon any person are not found by the collector or deputy collector, he is authorized to collect such taxes by seizure and sale of real estate. . . . . (Art. 1009.)

Rulings. The property of one spouse is not subject to distraint to enforce payment of an income tax obligation of the other spouse unless there has been a transfer of property from one spouse to the other after a tax has been assessed and demand made for payment thereof. (C. B. 5, p. 239; O. D. 1056.)

Property possessed by a taxpayer at the time a lien for tax attached under section 3186, R. S., is subject to distraint for the collection of the tax and interest in the hands of a person who acquired it by reason of his death. (C. B. 5, p. 239; O. D. 1144.)

ENFORCEMENT OF TAX LIEN BY BILL IN EQUITY.—The government may secure a lien for unpaid taxes. The following regulation outlines procedure to be followed under Sec. 3186 of Revised Statutes:

Regulation. In the event of nonpayment of a tax and penalties after demand, the amount becomes a lien in favor of the United States from the time when the assessment list was received by the collector upon all property and rights to property belonging to the taxpayer, except that the lien is not valid as against any bona fide mortgagee, purchaser, or judgment creditor until notice thereof is filed in the proper public office or offices on Form 668. The collector may file such notice of lien upon making demand for payment of the tax, unless payment is made immediately upon demand. What is immediate payment will depend upon the nature of the demand. Where the collector contemplates filing such notice of lien on demand, whenever practicable, the demand should be made upon the taxpayer in person. In any case where there has been refusal or neglect to pay the tax and it has become necessary to seize and sell real estate to satisfy it, a bill in equity may be filed in a district court of the United States to enforce the lien of the United States for tax upon any real estate in which the delinquent has any right, title, or interest subject to the lien. This remedy does not supersede distraint but is cumulative. (Art. 1010.)

Ruling. Section 3466, Revised Statutes, is in pari materia with sections 64 (a) and 64 (b) of the Bankruptcy Act, and to the extent that it is in conflict therewith it is superseded thereby. Therefore, no priority is given to Federal taxes except over creditors, and such taxes are not entitled to priority over the administration expenses of the bankruptcy proceedings. (C. B. 2, p. 241; T. D. 3000.)[38]

District courts of the United States are invested with jurisdiction to render such judgments and decrees, in law and in equity, as are necessary or appropriate for enforcement of the law.[39]

COMPROMISE OF TAXES AND PENALTIES.—Sec. 3229 of the Revised Statutes gives the Commissioner power to compromise cases of taxes and penalties both before and after suit has been commenced. The nature and extent of this power are explained in the following regulation.

Regulation. The Commissioner, with the advice and consent of the Secretary of the Treasury, may compromise any civil or criminal case arising under the internal revenue laws instead of commencing suit thereon, and with the advice and consent of the Secretary and the recommendation of the Attorney General may compromise any such case after suit thereon has been commenced by the United States. Accordingly, the power

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[38] This is a digest of the Circuit Court decision in the case of *Smielanka* v. *Zibell*, 263 Fed. 883.

[39] Sec. 1318.

to compromise extends to (*a*) civil and criminal cases; (*b*) cases whether before or after suit; and (*c*) taxes and penalties, except that taxes legally due from a solvent taxpayer may not be compromised. Refunds can not be made of accepted offers in compromise in cases where it is subsequently ascertained that no violation of law was involved. . . . . (Art. 1011.)

Claims for Abatement

The following pages deal with remedial procedure provided by the Treasury or courts whereby the taxpayer may secure abatement or cancellation of an assessment or obtain refund of taxes overpaid.

IMPORTANCE OF FILING CLAIMS.—Preceding pages cover appeals from findings of revenue agents, and all remedial measures up to time of assessment. After an assessment has been entered on collector's list, there is no recourse except by claim for abatement (before tax is paid) or refund (after tax is paid).

Because of the many erroneous assessments made, taxpayers should know how to question an assessment. If a claim is refused, the necessary procedure to secure from the courts an impartial opinion as to the sufficiency of the taxpayer's side of the contention should be understood. Until the case reaches the courts it cannot always be said that the facts are passed upon impartially.

RESTRICTION ON USE OF CLAIMS IN ABATEMENT.—Change of procedure brought about by Sec. 250 (d) regarding notice and appeal in cases of proposed additional assessments, greatly restricts use of claims in abatement.

This section, after providing for assessment of additional taxes only after notice and opportunity for appeal, states that when such assessments after notice have been made, "no claim in abatement of the amount so assessed shall be entertained: *Provided*, That in cases where the Commissioner believes that the collection of the amount due will be jeopardized by such delay he may make the assessment without giving such notice or awaiting the conclusion of such hearing. . . . ."

Except when the Commissioner believes the additional tax is in jeopardy, an application in the nature of a formal appeal must be allowed and a decision must be made before assessment, provided notice of appeal is filed in accordance with statutory provision. If notice of appeal is not given within specified time, or if decision on appeal is unfavorable, assessment will be made and must be paid in due course. The collector is not authorized to accept a claim for abatement. In such a case a claim for refund is the only recourse.

ABATEMENTS MAY BE FILED—WHEN?—Claims for abatement have not been entirely abolished. Use for them may be found in the following cases:

1. Where the Commissioner believes the tax is in jeopardy, in which case he may assess the tax without giving usual notice and opportunity for appeal.
2. Where it is necessary to postpone payment of one or several instalments, as when an error has been discovered before all instalments of a tax have been paid.
3. Where a claim for abatement or credit on file with Treasury has been disallowed without taxpayer having had opportunity to be heard on appeal.

4. Where an erroneous assessment is made, as when, through a mistake, assessments are made without legal notice to taxpayer or in spite of a notice of appeal.

5. Where an abatable penalty has been assessed as part of a tax.

Experience may show that other cases will arise, because a claim for abatement may be used where there is any good reason to hold a payment in abeyance; provided the case is of a kind in which Sec. 250 (d) does not specifically forbid its acceptance.

CONTENT OF CLAIM SUPPORTED BY SWORN STATEMENT.—The following regulation sets forth details of procedure in claims for abatements.

Regulation. Claims for abatement of taxes illegally or erroneously assessed shall be made on Form 843. They must be sustained by the affidavits of the parties against whom the taxes were assessed or of other parties cognizant of the facts. When a tax has been assessed and turned over to the collector, the presumption is that the assessment is correct. The burden of proof in rebutting the presumption and showing that it was improperly or illegally assessed, or that relief should be given under a remedial statute, rests upon the applicant for abatement. The affidavits must therefore contain full and explicit statements of all the material facts relating to the claim in support of which they are offered and to the proper consideration of which they are essential. The legality of the claim is to be determined by the Commissioner upon the facts presented to him. The filing of a claim for abatement does not necessarily operate as a suspension of the collection of the tax or make it any less the duty of the collector to exercise due diligence to prevent the collection of the tax being jeopardized. He should, if he considers it necessary, collect the tax and leave the taxpayer to his remedy by a claim for refund. Claims for abatement may not be filed where the taxpayer has had the benefit of the provisions of section 250 (d).[40] . . . . (Art. 1032).

Many claims for abatement are denied because foregoing procedure is not followed. It is not enough to make a short affidavit to the effect that the tax is illegally or wrongfully assessed. The additional assessment is often the result of a long and careful audit of returns. The taxpayer is entitled to full particulars of the basis of assessment.

The claim for abatement should contain complete references to law and regulations bearing on matters in dispute. It should cite such authorities, precedents, and business practices as are applicable.

MEANING OF "BONA FIDE CLAIMS."—Sec. 250 (e) of the law provides that, when claim for abatement is made in good faith and subsequently denied, interest at rate of ½ of 1% per month, instead of 1%, shall be charged on the tax from time it was due until claim is decided. It is important not to invoke the law unless the abatement can be proved to be "the subject of a bona fide claim."

COLLECTOR MAY REQUIRE A BOND.—As it is within the discretion of a collector to accept or reject a claim for abatement, and as he is charged personally with the assessment, he may require a bond at time of accepting a claim for abatement.

Ruling. . . . . While there is no provision of law expressly authorizing the collector to require a bond as a condition of suspending the collection of the tax, he is personally charged with the amount of the assessments made against taxpayers in his district and he is required to use due diligence in collecting such taxes. If he fails to exercise due diligence, it is clear that he becomes personally liable for any tax which may be lost through such failure. He may require the tax to be paid and leave the taxpayer to his remedy by a claim for refund, and if he see fit to suspend the collection of the tax in

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[40] Sec. 250 (d) gives the taxpayer the right, upon notice of assessment to be made in 30 days, to appeal before such assessment is finally made.

any case where a final collection may thus be jeopardized he does it at his own risk. It is within his discretion to protect himself by requiring the taxpayer to execute a bond in the amount of the tax the collection of which is postponed. . . . . (C. B. 1, p. 257; O. 957.)

REJECTION OF CLAIM BY COLLECTOR.—After a claim for abatement has been accepted by a collector and has been forwarded to the Commissioner, collector may send out a second notice and demand, although the Commissioner has neither allowed nor rejected the claim.

After a collector accepts a claim for abatement and forwards it to the Commissioner for consideration, he should not send out a second notice and demand until the Commissioner has notified him that it has been rejected. When the claim is accepted the collector must be convinced that it is a "bona fide claim," and that the taxpayer is in a position to pay and will pay the tax if the Commissioner, after consideration, rejects it. If after a claim has been accepted some unforeseen event takes place which jeopardizes the government's interest, it would be reasonable to demand either a bond or payment. But this should be done only with approval of the Commissioner, because there are many taxpayers who have claims pending with the Treasury which have been on file many months.

It is improper to include the 5% penalty and interest at rate of 1% a month, because the penalty has beeen made inoperative by the filing of the claim for abatement. Interest can be collected only on the amount of the claim disallowed by the Commissioner.

When a second notice and demand is received, the matter should be taken up immediately with the collector. He should be informed that a claim for abatement is on file and that it has not been acted upon by the Commissioner. By this means, summary action by the collector will probably be prevented.

CLAIM BY RECEIVERS—NO BOND.—

Ruling. Where the property of a corporation is in the hands of a receiver who files a claim for abatement of an additional assessment of income and profits taxes for 1917, no bond should be required as security for the payment of such taxes. The government, however, has the right under section 3466, R. S., to receive payment of these taxes from the receiver in preference to the creditors of the corporation. (C. B. 3, p. 308; O. D. 733.)

INTEREST AND PENALTIES ON REJECTED CLAIMS.—When claim for abatement is filed there is no assurance that it will be allowed by the Commissioner. Therefore, it is important that the claim be filed with the collector within 10 days from date of assessment to prevent imposition of the 5% penalty.

Law. Sec. 250. . . . . (e) . . . . *Provided*, That as to any such amount which is the subject of a bona fide claim for abatement filed within ten days after notice and demand by the collector, where the taxpayer has not had the benefit of the provisions of subdivision (d), such sum of 5 per centum shall not be added and the interest from the time the amount was due until the claim is decided shall be at the rate of one-half of 1 per centum per month on that part of the claim rejected. . . . .

Ruling. . . . . In accordance with the provisions of section 250 (e) and 250 (h) of the Revenue Act of 1921, interest at the rate of 1 per cent a month upon the rejected amount embraced in said claim for abatement for 1917 taxes, which claim was filed prior to the passage of the Revenue Act of 1921, ceased to run with the passage of that Act, and from that date until the claim for abatement was decided such rejected portion of the claim carries interest at the rate of one-half of 1 per cent a month. . . . . (I-31-443; I. T. 1408.)[41]

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[41] For discussion of this ruling see Montgomery's Income Tax Procedure, 1923.

CLAIMS FOR INVENTORY LOSSES.—The 1918 law fixed the interest rate on such rejected claims at 1% a month [Sec. 214(a-12)]. Ruling I-46-595; I. T. 1500 holds that the 1% rate is still in force. If Sec. 250 (e) is applicable, the ruling may not be sound. Payment should be made under protest until the point is authoritatively settled.

Claims for Credit

Prior to 1918, taxes overpaid in previous years could not be used to offset taxes of later years. To remedy this injustice, Congress established the claim for credit.

WHEN MAY A CLAIM FOR CREDIT BE FILED?—

Law. Sec. 252. That if, upon examination of any return of income made pursuant to this Act, the Act of August 5, 1909, entitled "An Act to provide revenue, equalize duties, and encourage the industries of the United States, and for other purposes," the Act of October 3, 1913, entitled "An Act to reduce tariff duties and to provide revenue for the Government, and for other purposes," the Revenue Act of 1916, as amended, the Revenue Act of 1917, or the Revenue Act of 1918, it appears that an amount of income, war-profits or excess-profits tax has been paid in excess of that properly due, then notwithstanding the provisions of section 3228 of the Revised Statutes, the amount of the excess shall be credited against any income, war-profits or excess-profits taxes, or installment thereof, then due from the taxpayer under any other return, ...

Regulation. Any amount of income, war profits or excess profits tax paid in excess of that properly due shall be credited against any such taxes due from the taxpayer under any other return. To obtain such credit the taxpayer should proceed as follows:

(1) Where the credit demanded is equal to or less than any outstanding assessment of tax, a taxpayer desiring to obtain such credit shall file with the collector for the district in which his original return was filed a claim on Form 843, which shall be sworn to and shall contain the following statements: (*a*) business engaged in by the claimant; (*b*) character of assessment or tax; (*c*) amount of tax claimed as a credit; (*d*) unpaid assessment against which credit is asked and for what taxable year; and (*e*) all facts regarding the overpayment.

(2) Where the amount claimed as a credit is greater than the outstanding assessment of tax, a taxpayer desiring to obtain such credit and the refund to which he is entitled shall file Form 843, stating thereon the respective amounts claimed as a credit or as a refund. . . . . All the facts regarding the total overpayment should be stated in the claim. (Art. 1034.)

Claim for Credit May Be Applied Only Against Overpayment of "Income, War Profits, or Excess Profits Tax."—

Rulings. Munitions tax overpayments for one year may not be credited against an additional assessment of munitions taxes for a subsequent or prior year.

Munitions tax overpayments may not be credited against additional assessments of income, excess profits and war profits taxes for the same or for any subsequent or prior taxable year. (C. B. 4, p. 330; Digest A. R. M. 123.)

The tax imposed on undistributed net income of corporations by section 10 (b) of the act of September 8, 1916, as amended by the act of October 3, 1917, is held to be an income tax within the meaning of section 252 of the Revenue Act of 1918 and may, therefore, be credited against an additional amount of income tax due from the taxpayer within the limitations of that section. (C. B. 2, p. 244; Digest O. 974.)

The amount of any ad valorem penalty and interest which has been collected without authority may be made the subject of a claim for credit against income, excess-profits, or war-profits taxes due from the taxpayer under any other return, if such claim is filed within the five-year period of limitation provided in section 252 of the Revenue Acts of 1918 and 1921.

This conclusion is based on the theory that interest and penalties are in the nature of

accretions to the tax and should be considered as a part thereof in connection with any refund or credit of the tax. (I–37–505; I. T. 1447.)

Claim for Credit May Not Include Judgment Claims.—

Ruling. . . . . After careful reconsideration of the question it is the opinion of this office that section 252 of the Revenue Act of 1921 is not applicable to judgments and that no part of a judgment entered in favor of a taxpayer and against the United States or a collector for income and excess-profits taxes illegally or erroneously collected and interest allowed thereon by the court may be credited against any income or profits taxes then due from the taxpayer under any other return. . . . . (I–39–521; L. O. 1106.)

COLLECTOR NEED NOT RECEIVE CLEARANCE.—It is no longer necessary for taxpayers to secure clearances for claims for credit.

Regulation. Upon receipt by the collector of a claim for credit on Form 843, he will make proper record thereof in his office and, except in the case of claims covering tax assessed on the basis of returns on Form 1040 A, forward the claim immediately to the Commissioner irrespective of whether or not a claim for refund of the tax now claimed as a credit has previously been filed. Due notice will be given the collector and the taxpayer of the action taken on the claim.

If a claim is allowed against additional taxes due for other years, but such other taxes have not yet been assessed, only the amount of the excess of such taxes over the overpayment shall be assessed, or the excess of the overpayment over such taxes due shall be refunded as the case may be. The effective date of the filing of a claim for credit shall be the actual date of presentation to the collector. The filing of a claim for credit against the tax due under another return shall be subject to the same rules with respect to the addition of interest and penalties as if the taxpayer had filed a claim for abatement of the tax against which credit is desired. . . . .

Under no circumstances will a taxpayer be entitled to credit for an alleged overpayment of tax prior to the allowance of such credit by the Commissioner. An attempt to take a credit prior to such allowance shall not be held to be the filing of a claim under section 252 of the Revenue Act of 1921. (Art. 1035.)

WHAT CONSTITUTES MAKING OR ALLOWANCE OF A CREDIT?—

Ruling. The reference, in effect, asks advice whether in a case where a claim for credit has not been filed by the taxpayer a credit for an excess of tax assessed for a prior year may be made or allowed if the examination of the return was made and the excess amount determined upon within the five-year period of limitation named in section 252, and the taxpayer within the limitation period was advised of the amount due on subsequent returns after the credit had been applied; but after the limitation period has expired the Department reconsiders and finds that a mistake was made in the amount of the tax due on the subsequent returns and the excess amount originally found as a credit (*a*) has not been changed, (*b*) should be increased, (*c*) should be decreased. It is assumed from the reference that the assessment represented by the original letter of advice to the taxpayer was not made. If it was made there would seem no room for doubt, since clearly the credit was made when the assessment list went out and any reduction or increase of tax would have to be accomplished by abatement or refund or further assessment.

The question presented depends for solution upon what constitutes the making or allowance of a credit within the meaning of section 252. A statement contained in a letter from the Department to a taxpayer that the taxpayer is entitled to a credit is clearly not a credit actually made or allowed. Something must be done in a formal way that will amount to a direction to the collector who is charged with the collection of internal taxes. Prior to such a direction he has nothing to do with the taxpayer's account since it has not assumed that status of an account stated to him. Such direction by the Commissioner is usually made by formal assessment list signed by him. When such a formal statement or direction to the collector is signed by the Commissioner and forwarded to the collector, showing the amount of the tax to be collected over and above the credit, the Commissioner has formally made or allowed the credit. When this is done the credit has been made or allowed, but prior thereto anything that is done in the way of stating the case by employees of the Bureau or in the way of statements to the

taxpayer in letters from the Department can be nothing more than preliminary to the actual making or allowance of the credit by the Commissioner.

This is true where credits are considered and passed upon formally by the Commissioner. Where, however, the collector because of the provisions of the statute and regulations made pursuant thereto makes the credit without specific instructions from the Commissioner, the credit is actually made or allowed when the collector so records it, and in such a case subsequent action by the Commissioner in the way of a review of the collector's action, would not operate to fix the time when the credit was made or allowed, since in such a case the collector had before him the account of the taxpayer and is charged by law and the regulations to enter the credit.

. . . . It is held that where the allowance of a credit as provided in section 252 of the Revenue Act of 1918 is being considered by the Commissioner, the credit is made or allowed only when the Commissioner signs and forwards to the collector a formal statement or direction or assessment list showing the amount of the tax to be collected over and above the amount of the credit. (C. B. 4, p. 339; Sol. Op. 106.)

It is important that the privilege of filing claims for credit be not abused. The Treasury is justified in interpreting the law strictly. It is not unreasonable to require full compliance with provisions regarding claims for refund.

EFFECT OF CLAIM FOR CREDIT.—

Ruling. A . . . . credit can not be made until the facts have been carefully examined and the validity of the credit approved by the Commissioner. That is not to say, however, that a claim for credit has no effect until approved. The *claim* for credit may have precisely the same effect as a *claim* for abatement; that is, by forbearance of the collector it may suspend collection until it is acted upon by the Commissioner. If approved, credit is then given relieving both the collector and the taxpayer from any further liability. If rejected, interest is to be paid upon the amount suspended from the time it was due.

This view of the law appears to be entirely consistent with its language and also with the purpose which it was believed Congress had in mind; that is to say, relief to the taxpayer from being required to pay into the Treasury amounts, possibly large, at the same time that he is making a bona fide claim that other amounts are due him. As held in Law Opinion No. 957, it does not prevent the collector, if he so desires, from proceeding to collect at once just as he may do in the case of an abatement claim filed, but leaves it optional with him to suspend collection until such time as credit is given relieving both him and the taxpayer. (C. B. 2, p. 247; A. R. M. 46.)

PLACE OF FILING WHEN DISTRICT IS CHANGED.—

Ruling. Where a corporation filed a return for 1918 with the collector of one district and a return for 1919 with the collector of another district, and subsequently rendered an amended return for 1918, showing less tax liability, together with a claim for credit against the outstanding tax due for 1919, covering the overpayment to the extent shown by the amended return, it should file the amended return with the collector with whom the original return was filed for the year 1918.

The claim for credit should be filed with the collector with whom the return for 1919 was filed, who should forward same to the collector with whom the return for 1918 was filed, for a notation thereon of the facts required by the certificate on the reverse side as to the assessment overpaid for 1918. When this has been done it will be returned by him to the collector with whom the 1919 return was filed, who will make a notation thereon as to the 1919 assessment to be credited, and forward same to the Commissioner of Internal Revenue for consideration.

In filing the amended return the taxpayer should call attention to the fact that a claim for credit of the overpayment has been filed with the collector with whom the 1919 return was filed, and the collector with whom the claim for credit was filed should be notified that an amended return has been filed. (C. B. 3, p. 310; O. D. 740.)

CLAIM FOR CREDIT BY AFFILIATED COMPANIES.—

Ruling. Upon the audit of the returns of several affiliated companies for the period 1909-1917, inclusive, it is found that certain of these companies are entitled to refund on account of excess taxes paid during that period. On the basis of the consolidated return for 1918, covering these companies, it appears that assessment of additional taxes

will be required. The question therefore arises whether refunds due the subsidiary companies may not be used as a credit against the additional tax to be assessed on the basis of the consolidated return.

For the purposes of the income tax Acts each affiliated corporation is considered a separate and distinct entity even though a consolidated return is submitted on behalf of all. A claim for credit or refund of excess tax paid by one of the affiliated corporations can be made only by the corporation entitled to receive such credit or refund. Thus with respect to refunds, credits, and additional assessments each affiliated corporation occupies a status similar to that of an independent and unaffiliated corporation. The additional tax assessed for the year 1918, on the basis of the consolidated return for that year, must be apportioned among the affiliated corporations, and to the extent that each debtor corporation is entitled to receive back a part of the taxes paid in prior years, a claim for credit may be filed and the amount of additional tax each subsidiary is required to pay may be reduced thereby by the amount it is entitled to receive. In case the amount payable to the subsidiary exceeds its proportionate part of the additional tax assessed under the consolidated return, it may file a claim for refund for the difference. A subsidiary which is required to pay additional tax and is at the same time entitled to receive back in the form of a refund a portion of the amount paid as taxes in prior years, may, however, within its option pay the entire amount of the additional tax and file a claim for refund for the entire amount it is entitled to receive. (C. B. 3, p. 311; O. D. 683.)

Affiliated companies may apportion any tax assessed against them on any basis upon which they may agree. Apportionment should be made so as to exhaust the entire amounts due from the government for prior years.

PARTNERSHIP OVERPAYMENT UNDER 1917 LAW.—

Ruling. In accordance with a memorandum from the Solicitor of Internal Revenue, dated May 5, 1922, an overpayment of excess-profits taxes by a partnership for the year 1917 may be credited against any income taxes due from the individual members of the partnership, provided the claim for credit is accompanied by an agreement between the partnership and the individual members thereof requesting that such action be taken. This is in harmony with the converse of this ruling, which appears as A. R. R. 859 (Bulletin I–15-217), in which it was held that an overpayment of income taxes by the individual members of a partnership for 1917 may be credited against an additional assessment of excess-profits tax due from the partnership for that year. This decision also agrees with the ruling that overpayments of tax by a husband are allowable as a credit against amounts due from the wife as a result of the community property ruling. Credit for taxes in the above cases can not be made in the absence of express agreements between the parties concerned.

It is not necessary that the taxpayer file a formal claim for credit. Credits may be made between the accounts of individuals and partnerships of which the individuals are members and vice versa as well as between husband and wife, even though no claim for credit is actually involved, provided an agreement between the partners is obtained. Certificates of overassessment in such cases may, therefore, be made in accordance with the agreements without the taxpayer going through the formality of filing a claim for credit. (O. D. 180, C. B. 1, p. 309, modified.)[42] (C. B. I–1, p. 318; I. T. 1361.)

PARTNERSHIP INCORPORATED PRIOR TO JULY 1, 1919.—

Ruling. Returns for 1918 were filed for a partnership and its members in accordance with the Revenue Act of 1917, prior to the passage of the Revenue Act of 1918, and tax paid accordingly. The partnership was incorporated prior to July 1, 1919, and elected to be taxed as a corporation under the provisions of paragraph 3, section 330, Revenue Act of 1918. Amended returns for 1918 showing overpayment of tax were filed by the partners.

There is no provision in the law whereby either the tax by the partnership or any excess tax paid by the partners may be credited against any tax liability of the successor corporation for any year. Remedy may be sought only by the partnership and the

[42] O. D. 180 did not permit such a credit. For criticism of O. D. 180, see Income Tax Procedure, 1922, p. 284.

individual members thereof filing claims for the refunding of any excess tax paid. (C. B. 2, p. 247; O. D. 457.)

SOLE OWNER OF CORPORATION.—

Ruling. Certain corporations overpaid their taxes in prior years and there is no way in which they can now use the excess amount of tax paid as a credit inasmuch as there is no tax due. An individual owning 100 per cent of the stock in one of these corporations finds that he is liable to pay a tax to the Government and claims that he should not be required to pay his individual tax while the corporation of which he is the sole owner is waiting for a claim for refund to be adjusted and paid.

It is held that inasmuch as the individual and the corporation of which he is the sole owner are two separate and distinct entities, he is not entitled to claim as a credit against taxes due under his personal return an amount of tax overpaid by the corporation. (C. B. I-1, p. 316; I. T. 1259.)

SUCCESSOR CORPORATION FILING CREDIT.—

Ruling. In view of the fact that the statute of New Jersey under which a merger or consolidation of corporations resulting in the formation of another corporation is accomplished provides, in effect, that the successor corporation shall represent predecessor corporations in the enforcement of their rights, it is held that the successor corporation is entitled to file claim for credit on account of the overpayment of tax by the predecessor corporation. (C. B. 4, p. 335; O. D. 950.)

CLAIM FOR CREDIT BY EITHER HUSBAND OR WIFE.—

Ruling. Where claims for the refund of taxes erroneously paid for 1919 and prior years have been filed by the husband as a result of the Attorney General's ruling relative to community property under the laws of Texas (T. D. 3071), such claims for refund may be converted into claims for credit to be applied against any taxes due from the husband or wife as shown by separate returns filed by them for the taxable year 1920 and subsequent years, subject to the provisions of section 252 of the Revenue Act of 1918. Such claims for credit must be accompanied by an agreement signed by the husband and wife consenting to the adjustments therein demanded. A claim for refund may be filed for any excess of the amount claimed as a credit over taxes shown to be due. (C. B. 4, p. 335; O. D. 854.)

CLAIM FOR CREDIT ARISING FROM JOINT RETURN.—

Ruling. When an amended joint return for 1918 is filed by husband and wife, a single claim for credit may be so applied against any outstanding taxes due at the time the claim for credit is filed, providing an agreement signed by the taxpayer and his wife consenting to the adjustments therein demanded accompanies such a claim. However, if no outstanding taxes are due by the taxpayer or his wife, a claim for refund of the excess taxes paid for 1918 should be filed, accompanied by the agreement by the taxpayer and his wife referred to. (C. B. I-1, p. 316; Digest I. T. 1162.)

Claims for Refund

NATURE OF CLAIM.—After a tax has been paid and taxpayer believes it was unlawfully or wrongfully assessed or collected, he may make claim for refund. Generally speaking, excepting restriction with respect to time limit for filing, the government imposes no restrictions upon claims for refund and such claims are considered on their merits. This practice must not be confused with the procedure in case of **suit** against the government. When suit is brought the government interposes all legal obstacles at its command.

Regulation. Claims by the taxpayer for the refunding of taxes and penalties erroneously or illegally collected shall be made on Form 843. In this case the burden of proof rests upon the claimant. All the facts relied upon in support of the claim should be clearly set forth under oath. In the case of the taxpayer's death, certified copies of the letters of administration or letters testamentary, or other similar evidence, must be annexed to the claim to show the authority of the administrator or executor. The

affidavit may be made by an agent of the person assessed, but in such a case a power of attorney must accompany the claim. Checks in payment of claims allowed will be drawn in the names of the persons entitled to the money and shall, unless otherwise directed, be sent directly to the proper persons. The Commissioner has no authority to refund on equitable grounds penalties legally collected.[43] . . . . (Art. 1036.)

The regulations do not require that claims for refund be accompanied by collector's receipt or by paid check showing payment of tax.

If claim for abatement was not made, claim for refund should be supported by satisfactory evidence. If claim for abatement was made and denied, it cannot be expected that claim for refund will be allowed, but taxpayer has nothing to lose by attempting to improve his case and by securing any new evidence to strengthen it.

CLAIMS FOR REFUND NOT FILED WITH COMMISSIONER DIRECTLY.[44]—Notwithstanding that Sec. 3228 of the Revised Statutes, as amended by Sec. 1316, provides that claims for refund "must be presented to the Commissioner," the Treasury for administrative reasons requires claims to be filed with the collector.

Ruling. Claims for refund should in all cases be filed with the collector of internal revenue to whom the tax was paid or with the deputy collector of the division of such district in which the claimant resides. Warrants in payment of such claims will be made to the order of the claimants as provided in section 6, Department Circular 230. (C. B. 4, p. 408.)

ATTORNEY MAY FILE CLAIM FOR REFUND AND RECEIVE WARRANT.—

Rulings. The Bureau will recognize a general power of attorney as sufficient authority for the filing of more than one claim for refund on behalf of the grantor of such power. It should be noted, however, that under the provisions of section 6 of the abovementioned circular special powers are required in certain cases. In cases where a number of claims are to be filed under a general power of attorney the original power should be attached to the first claim filed on behalf of the claimant granting the power, and a copy thereof should be annexed to each succeeding claim, special reference being made in each copy to the claims to which the original instrument was attached.

The Bureau does not require that a power of attorney to file a claim for refund be in any special form. It is merely necessary that the instrument meet the legal requirements of powers of attorney in general.

A power of attorney given by a corporation should be signed by the officers who are duly authorized to execute such instrument.[45] (C. B. 4, p. 341; O. D. 927.)

Before a refund may be made of a tax paid by a withholding agent in behalf of a foreign Government, it is necessary that a power of attorney be obtained from the foreign Government authorizing the agent to file the claim and to collect the money in its behalf. In the absence of special authorization, the diplomatic representative of the foreign country may not act for the foreign country in matters of public moneys. (C. B. I-1, p. 318; I. T. 1175.)

WHEN FORMAL CLAIMS FOR REFUND NOT NECESSARY.—The Commissioner may issue warrants to cover overpayment without requiring taxpayer to file a formal claim for refund or credit when Treasury's examination shows an overpayment by taxpayer. It is advisable, however, always to file a formal claim. If a claim has been filed, Commissioner may make a refund even though statutory period expires subsequent to filing of claim.

Law. Sec. 1315. That section 3220 of the Revised Statutes, as amended, is reenacted without change, as follows:

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[43] For cases in which refund is made through collectors, see Montgomery's Income Tax Procedure, 1920, p. 217.

[44] Formerly, claims for refunds could be filed directly with the Commissioner. See letter dated Mar. 29, 1919, Montgomery, Income Tax Procedure, 1921, p. 212.

[45] For form of power of attorney, see p. 1558.

"Section 3220. The Commissioner of Internal Revenue, subject to regulations prescribed by the Secretary of the Treasury, is authorized to remit, refund, and pay back all taxes erroneously or illegally assessed or collected, all penalties collected without authority, and all taxes that appear to be unjustly assessed or excessive in amount, or in any manner wrongfully collected; . . . ."[46]

The Solicitor issued the following opinion interpreting the 1918 law. It is applicable to the 1921 law.

Ruling. . . . . Section 3220, Revised Statutes, was amended by Congress at the instance of the Treasury Department. Before amendment section 3220, Revised Statutes, provided that the Commissioner could remit or refund taxes subject to regulations made by the Secretary only upon appeal to him made. The Treasury Department believed that a taxpayer should in every case be advised of every overpayment of tax and that the overpayment should be refunded, and it was believed that it would facilitate the work of the Internal Revenue Bureau if the Commissioner could make a refund without the necessity of a claim being filed. It was not the intention of the Treasury Department that the Commissioner should have authority to allow claims which were barred by any statute of limitation, or to refund a tax where the taxpayer had no right to file a claim for the refund therefor. It was apparently not the intention of Congress to make it possible for the Commissioner, subject to regulations made by the Secretary, to ignore statutes of limitation. It must therefore be held that the Commissioner has authority to refund a tax only in a case where a claim has been filed which is not barred by any statute of limitation or where the taxpayer has a legal right to file a claim for the refund of the tax. (C. B. 3, p. 302; Sol. Op. 79.)

Collectors have been instructed that a reduction of assessments and adjustments of overpayments of revenues may be accomplished "on the basis of a certificate of overassessment prepared by the appropriate administrative unit in the Bureau in each case in which an overassessment of tax is disclosed through the audit of a return."[47]

CLAIMS FOR REFUNDS BY RESIDENT OR NON-RESIDENT ALIENS.—

Ruling. When a claim for refund is filed by aliens, resident or non-resident, on Form 46, a copy of the form upon which the alien was assessed and taxed should be attached to Form 46.[48] (C. B. 1, p. 258; O. D. 472.)

STATUTE OF LIMITATIONS.—

Ruling. An amount refundable under section 252 of the Revenue Act of 1921 can not be applied against a tax which is not collectible, either by assessment or suit, due to the running of the statute of limitations. . . . . (C. B. I-1, p. 313; L. O. 1095.)

TIME LIMITS FOR FILING CLAIMS FOR REFUND.—Taxpayers, to secure credits or refunds of taxes overpaid, must file claims before expiration of 5 years from dates when returns were made or within 4 years after payment of tax.

Law. Sec. 252. That if, upon examination of any return of income made pursuant to this Act, the Act of August 5, 1909, entitled "An Act to provide revenue, equalize duties, and encourage the industries of the United States, and for other purposes," the Act of October 3, 1913, entitled "An Act to reduce tariff duties and to provide revenue for the Government, and for other purposes," the Revenue Act of 1916, as amended, the Revenue Act of 1917, or the Revenue Act of 1918, it appears that an amount of income, war-profits or excess-profits tax has been paid in excess of that properly due, then, notwithstanding the provisions of section 3228 of the Revised Statutes, the amount of the excess shall be credited against any income, war-profits or excess-profits taxes, or installment thereof, then due from the taxpayer under any other return, and any balance of such excess shall be immediately refunded to the tax-

[46] Sec. 1323 (Sec. 1316 of the 1918 law) re-enacts Sec. 3225 of the Revised Statues which limits refunds to cases in which the return was not *wilfully* false.

[47] T. D. 3260, dated Dec. 8, 1921.

[48] Form 46 has now been replaced by Form 843.

payer: *Provided*, That no such credit or refund shall be allowed or made after five years from the date when the return was due, unless before the expiration of such five years a claim therefor is filed by the taxpayer: *Provided further*, That if upon examination of any return of income made pursuant to the Revenue Act of 1917, the Revenue Act of 1918, or this Act, the invested capital of a taxpayer is decreased by the Commissioner, and such decrease is due to the fact that the taxpayer failed to take adequate deductions in previous years, with the result that an amount of income tax in excess of that properly due was paid in any previous year or years, then, notwithstanding any other provision of law and regardless of the expiration of such five-year period, the amount of such excess shall, without the filing of any claim therefor, be credited or refunded as provided in this section: *And provided further*, That nothing in this section shall be construed to bar from allowance claims for refund filed prior to the passage of the Revenue Act of 1918 under subdivision (a) of section 14 of the Revenue Act of 1916, or filed prior to the passage of this Act under section 252 of the Revenue Act of 1918.

Sec. 1316. [Sec. 3228, Rev. Stat.] "All claims for the refunding or crediting of any internal revenue tax alleged to have been erroneously or illegally assessed or collected, or of any penalty alleged to have been collected without authority, or of any sum alleged to have been excessive or in any manner wrongfully collected, must be presented to the Commissioner of Internal Revenue within four years next after payment of such tax, penalty, or sum."

This section, except as modified by section 252, shall apply retroactively to claims for refund under the Revenue Act of 1916, the Revenue Act of 1917, and the Revenue Act of 1918.

Under Sec. 252, Treasury may grant refunds for all years subsequent to 1909 when based upon **inadequate depreciation** or other deductions to which taxpayer was entitled in such years. These refunds must be made in connection with examination of returns made under 1917, 1918, or 1921 laws.

Generally speaking, the distinction between Sec. 252 and Sec. 3228 (Revised Statutes) is that former applies only to income, excess profits and war profits taxes; while latter applies to all taxes specified—all Internal Revenue Acts. Furthermore, Sec. 3228 grants relief in cases not covered by Sec. 252. There is no doubt about the right to file claims for refund within 5 years after return was due. Dr. Adams in explaining Secs. 250 and 252 to the (Finance) Committee stated, "We have placed on the Government a 5-year limitation and on the taxpayer a 5-year limitation." (C. B. I-1, p. 314; L. O. 1095.)

Sometime during 1919, the Solicitor expressed the opinion that Sec. 252 of the Revenue Act of 1918 was not intended to take away the right given a taxpayer under Sec. 3228 of the Revised Statutes to make a claim for refund within 2 years after cause of action accrued or date of payment of tax under protest.[49] Presumably the same interpretation also applies to Sec. 252 of the 1921 law. In other words, it supplements the present Sec. 3228, with its limitation of "four years next after payment."

Meaning of "Paid."—

Ruling. . . . . Reference is made to a letter of April 7, 1921, wherein the following statement was made and questions asked:

The taxpayer's books and accounts are examined by a revenue agent. The agent finds that for the year 1914 the taxpayer has overpaid the amount of tax due. He also finds that the taxpayer owes additional tax for the year 1916, and in the adjustment of the agent's report the overpayment for 1914 is applied as a credit against the additional tax found due for 1916 and the balance of the 1914 overpayment is refunded. It later develops that the taxpayer instead of being liable for additional tax for the year 1916, as found by the revenue agent, has overpaid his tax for that year. The taxpayer files a claim for credit of this overpayment against tax due for subsequent

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[49] C. B. 1, p. 249; O. 833.

years. The question presented is, how much tax may be assumed to have been paid by the taxpayer for the year 1916, i.e., the amount actually paid in cash or the cash payment plus the credit on account of the overpayment for 1914?

If it is held in the foregoing that the taxpayer has paid the cash payment plus the amount credited on account of the overpayment for 1914, and a claim for refund is filed, how should the refund claim be adjusted?

It is to be understood that in both instances mentioned above no record of a credit for overpayment of 1914 tax against additional tax originally found due for the year 1916 appears on the assessment list.

. . . . The Government in the present instance was expressly authorized to refund the taxes erroneously collected or to accept such taxes as a credit. The credit having been duly made, it seems clear that if the real remedial purpose of section 252 is to be effected, "paid" must be construed in its broader sense as including a credit duly made. It is accordingly held that where there has been an overpayment of taxes on an income return for a certain year and within five years from the date the return was due the overpayment is credited to taxes due on an income return for a subsequent year, such credit constitutes payment or part payment of the taxes for the year in which it was applied.

In reply to your second question, you are advised that the cash payment plus the amount allowed as a credit on account of the overpayment for 1914 should be adjusted for the year 1916 where the taxpayer files a claim for refund covering the latter year.

The fact that no record of a credit for overpayment of 1914 taxes appears on the 1916 assessment list does not affect the treatment of the credit as a payment for the year 1916, where the credit was in fact made within five years from the date the 1914 return was due. (C. B. 4, p. 336; Sol. Op. 107.)

Closing Date of 5-Year Period.—

Ruling. . . . . the schedule authorizing the allowance of a claim for refund must be actually signed by the Commissioner within five years from the date when the return was due, taking into consideration any extension of time granted for filing the original return.

(b) Does the fact that a revenue agent's report, or a valuation engineer's report, determining an overpayment within the five-year period, is not audited until after the five-year limit, bar the auditor from allowing same as an offset, it being recognized that taxpayer is not in possession of the valuation engineer's finding and in some cases not in possession of the revenue agent's report, and, therefore, could not have filed claim within five-year limitation?

A. Neither a refund nor a credit claim could be allowed under these circumstances. If a claim for refund is filed and the overpayment considered in connection with the refund claim, it would be barred by the five-year limitation. If it is proposed to allow credit for the overpayment, the fact that an overpayment has been made is not conclusively determined until audit of the agent's or engineer's report which is subsequent to the expiration of the five-year limitation.

(c) The auditor in auditing a case finds overpayment for 1913 and offsets this overpayment in an A-2 letter to taxpayer dated February 25, 1919. The taxpayer takes exception to depletion allowed and after several conferences with the valuation engineers a greater depletion for all years is allowed and a reaudit of his return is made October 10, 1919. The five-year limitation on 1913 has expired at the time the latter audit was made. Can this credit be allowed in view of the fact that a portion was allowed in the audit of February 25, 1919, or is the entire amount now barred by the statute?

A. The additional overpayment determined subsequent to the expiration of the five-year limitation could neither be refunded nor credited. . . . . (C. B. 4, p. 332, Mim. 2764.)

Claims Filed Before Sept. 8, 1916.—

Ruling. . . . . It is therefore the opinion of this office that a claim for refund filed prior to the passage of the Revenue Act of 1916 and after five years from the due date of the return and rejected either under section 3228, Revised Statutes, or on its merits can not be made the basis of a claim for refund under Section 252 of the Revenue Act of 1921. A claim filed prior to September 8, 1916, may be allowed, however, under section 252 when filed within five years from the date the return was due, regardless of

whether it was theretofore rejected under section 3228, Revised Statutes, or on its merits. . . . . (C. B. I-1, p. 319; L. O. 1093.)

Claims Filed Under Sec. 14 (a) of 1916 Law.—During 1920 a ruling appeared to the effect that claims filed under Sec. 14 (a) of the 1916 law, but which were not filed within 5 years from date when return was due, could not be allowed under the 1918 law.[50] The last proviso in Sec. 252 of the 1921 law (see p. 1587) revives these claims.

Ruling. . . . . The second query propounded raises the question whether a claim filed under section 14 (a) of the Revenue Act of 1916, which could not be allowed under section 252 of the Revenue Act of 1918 because not filed within five years of the due date of the return, may now be allowed by reason of the last proviso of section 252 of the Revenue Act of 1921. It will be noted from Solicitor's Opinion 79, heretofore quoted, that claims filed under section 14 (a) of the Revenue Act of 1916, pending in the Commissioner's office on February 25, 1919, and not saved by section 252 of the Revenue Act of 1918, fell by reason of the repealing Act. That opinion recognized the unfortunate situation which the above ruling resulted in and recommended congressional relief. . . . .

. . . . It was to meet this situation that Congress, in substantially re-enacting section 252 in the 1921 Act, added the last proviso thereof already set forth in this opinion.

Claims filed under section 14 (a) more than five years from the date when the return was due would have been refundable except for the prohibition found in section 252 of the Revenue Act of 1918. Section 14 (a) merely permitted the filing of the claim and, once filed, the authority for the refund was found in section 3220, Revised Statutes; section 252 of the 1918 Act having been repealed by the 1921 Act and the same section of the later Act having specifically provided that nothing contained therein shall be construed to bar from allowance claims for refund filed prior to the passage of the 1918 Act under subdivision (a) of section 14, supra, such overpayment may be refunded. The legislative history of the proviso clearly discloses that its purpose was to permit of the allowance of claims filed under section 14 (a), regardless of whether such claims were filed within five years from the date the return was due, and this is further emphasized by the fact that it follows the general five-year limitation contained in section 252 and also that proviso which takes away every limitation as to time in the case of the recomputation of invested capital by the allowance of depreciation. It is believed that the proviso serves to grant the relief intended. To hold otherwise would make meaningless this provision of the Act.

It is therefore held that a claim for refund of taxes filed prior to the passage of the Revenue Act of 1918 under the provisions of section 14 (a) of the Revenue Act of 1916 may be allowed under the last proviso of section 252 of the Revenue Act of 1921. . . . .

(3) . . . . a written motion or application filed under section 14 (a) of the Revenue Act of 1916 to reopen a claim for refund theretofore rejected under section 3228, Revised Statutes, satisfies the requirement of section 14 (a), and if filed before the passage of the Revenue Act of 1918, the claim may be allowed under section 252 of the Revenue Act of 1921. (C. B. I-1, p. 319; L. O. 1093.)

Responsibility for Reopening Old Claims.—

Ruling. (4) A claim heretofore rejected and now allowable by the provisions of section 252 of the Revenue Act of 1921 should not be reopened and allowed by the Bureau on its own motion, except in those cases where, in the regular course of the examination of a return, it is found that a tax has been paid in excess of the amount due. (C. B. I-1, p. 319; L. O. 1093.)

Soldiers' and Sailors' Relief Act Does Not Apply to Time Limit on Refunds.—

Ruling. Section 205 of the Soldiers' and Sailors' Relief Act (40 Stat. 440), which excluded the period of military service in computing the period limited by law for the "bringing of any action," has no application to claims for refund and credit under the provisions of section 252 of the Revenue Act of 1921. (C. B. I-1, p. 311; Digest I. T. 1269.)

SUITS FOR RECOVERY WITHIN 5 YEARS AFTER PAYMENT.—An appeal to the Commissioner in form of claim for refund is first step in seeking

[50] C. B. 3, p. 302; Sol. Op. 79.

relief by a taxpayer. If the Commissioner delays action on claim for refund, suit may be brought against the collector after 6 months, without awaiting Commissioner's decision.

Law. Sec. 1318. That section 3226 of the Revised Statutes is amended to read as follows:

"Section 3226. No suit or proceeding shall be maintained in any court for the recovery of any internal-revenue tax alleged to have been erroneously or illegally assessed or collected, or of any penalty claimed to have been collected without authority, or of any sum alleged to have been excessive or in any manner wrongfully collected, until a claim for refund or credit has been duly filed with the Commissioner of Internal Revenue, according to the provisions of law in that regard, and the regulations of the Secretary of the Treasury established in pursuance thereof. No such suit or proceeding shall be begun before the expiration of six months from the date of filing such claim unless the Commissioner renders a decision thereon within that time, nor after the expiration of five years from the date of the payment of such tax, penalty, or sum."

This section shall not affect any suit or proceeding instituted prior to the passage of this Act, but shall apply to all suits and proceedings instituted after the passage of this Act, whether or not barred by prior Acts of Congress.

Since the Treasury is experiencing difficulties in clearing up claims within 5-year limit, taxpayers should be careful not to permit the period to expire before instituting suit.

PROOF OF APPEAL TO COMMISSIONER.—The Court of Claims of the U. S. has decided that when suit is brought by taxpayer against collector for recovery of tax, burden of proof is upon him to show that his appeal to the Commissioner has been taken and decided, or else that decision was delayed more than 6 months from date of appeal.[51]

Decision. The written appeal was the best evidence of which the case was susceptible, and if it was not in his power to have produced the original, it was nevertheless his duty to have produced an authentic copy thereof, or accounted for its absence.[52]

Regulation. The lodging of an appeal (claim for refund) made out in due form with the proper collector of internal revenue, for the purpose of transmission to the Commissioner of Internal Revenue in the usual course of business under the requirements of the regulations of the Secretary of the Treasury, is in legal effect a presentation of the appeal to the Commissioner. (Reg. 33, 1918, Art. 270.)[53]

An Amended Return or Claim for Abatement Does Not Constitute an Appeal.—The 1921 law amended Sec. 3226, Revised Statutes, by inserting the specific statement that "no suit . . . . shall be maintained . . . . until a claim for refund or credit has been duly filed with the Commissioner. . . . ."

Ruling. . . . . (d) A taxpayer, on April 15, 1918, filed amended returns for 1913 and subsequent years which showed an overpayment for 1913. The amended returns were not audited until July 1, 1919—four months after the expiration of the five-year limitation placed on the original return. Does the filing of an amended return within the five-year period act in the same capacity as a claim, as far as being allowed to offset the overpayment against an additional tax, or is it barred due to the fact that the final audit was not reached before the expiration of the five-year limitation on 1913 return?

A. . . . Amended returns do not take the place of a claim for refund or credit, and if filed, unsupported by such claim or claims, do not in themselves constitute a sufficient claim within the meaning of the statute to warrant the crediting or refunding of any taxes thereunder after the expiration of the five-year period. (C. B. 4, p. 332; Mim. 2764.)

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[51] *Lauer* v. *U. S.*, 5 Ct. Cl. 447.
[52] *Hubbard* v. *Kelley*, 8 W. Va. 46.
[53] This regulation is based upon *U. S.* v. *Real Estate Savings Bank*, 14 Otto 728, 104 U. S. 728, 26 L. Ed. 908, 28 Int. Rev. Rec. 87.

The Supreme Court of the U. S. has held[54] under an earlier law that a claim in abatement does not constitute an appeal to the Commissioner for a refund. For this decision as well as a decision[55] of a Circuit Court of Appeals taking the opposite position, see Montgomery's Income Tax Procedure, 1922, pp. 265–267. In view of this situation, taxpayers should be careful to reserve their legal rights by filing a claim for refund when a claim for abatement is rejected.

In a lower court, however, it has been held that if the Commissioner advised the taxpayer that no claim for refund was necessary, under such circumstances, collector cannot defend on ground that claim for refund was not filed.[56]

Application for Special Relief Does Not Constitute a Claim for Refund or Credit.—

Ruling. An application for special assessment under the provisions of sections 327 and 328 of the Revenue Act of 1918 does not in itself constitute a sufficient specific protest to meet the requirements of section 1324 of the Revenue Act of 1921, relative to the payment of interest on claims for credit or refund allowed after the passage of such Act. (C. B. I–1, p. 404; I. T. 1335.)

SUIT AGAINST COLLECTOR OF TAX AND NOT SUCCESSOR.—The United States Circuit Court of Appeals for the Seventh Circuit certified the following two questions to the U. S. Supreme Court:[57]

Decision. 1. Assuming that the declaration states a good cause of action had the suit been brought against S. M. Fitch, the internal revenue collector who actually collected and received the taxes, does it state any cause of action whatever against said S. M. Fitch's successor in office, the plaintiff in error, against whom the suit was brought, but who had no participation in the collection, receipt, or disbursement of such taxes?

2. May suit in the district court of the United States properly be brought and maintained against a United States collector of internal revenue for the recovery of the amount of a United States internal revenue tax, unlawfully assessed and collected, but in the collection and disbursement of which such collector had no agency, the entire transaction of such assessment, collection, and disbursement having occurred during the incumbency of such office of a predecessor in office of such collector?

The court answered both questions in the negative.

SUITS WHEN COLLECTOR IS DEAD.—The 1921 law gives a district court concurrent jurisdiction with the Court of Claims in cases where the collector is dead.

Law. Sec. 1310. . . . (c) Paragraph Twentieth of section 24 of the Judicial Code is amended by adding at the end thereof the following new paragraph:

"Concurrent with the Court of Claims, of any suit or proceeding, commenced after the passage of the Revenue Act of 1921, for the recovery of any internal-revenue tax alleged to have been erroneously or illegally assessed or collected, or of any penalty claimed to have been collected without authority or any sum alleged to have been excessive or in any manner wrongfully collected, under the internal-revenue laws, even if the claim exceeds $10,000, if the collector of internal-revenue by whom such tax, penalty, or sum was collected is dead at the time such suit or proceeding is commenced."

STATE COURTS HAVE NO JURISDICTION TO DETERMINE FEDERAL TAXES.—Two interesting cases,[58] decided by the Supreme Court of

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[54] *Rock Island, Arkansas & Louisiana Railroad Co.* v. *U. S.*, Nov. 22, 1920, 254 U. S. 141, 65 L. Ed. 188, 41 Sup. Ct. 55.

[55] *Loomis* v. *Wattles*, 266 Fed. 876. In the *Rock Island* case, *supra*, the Supreme Court criticized *Loomis* v. *Wattles*.

[56] *Black* v. *Bolen*, 268 Fed. 427.

[57] *Smietanka* v. *Indiana Steel Co.*, 42 Sup. Ct. 1, 66 L. Ed.—

[58] *Willmann, et al.* v. *Walsh*, 112 Atl. 804, 96 Conn. 79; and *Application of Willmann, et al.*, 112 Atl. 806. For the details of these decisions, see Income Tax Procedure, 1922, pp. 268–271.

Errors for the State of Connecticut, hold that Sec. 3449 of the Connecticut Statutes, which provides that any claim not presented to trustees in the liquidation of the affairs of a corporation within the time limited shall be barred, does not apply to federal taxes.

The higher court affirmed the lower court's decision in each case. In commenting upon the second case, the higher court said:

Decision. The facts found disclose that the federal taxes involved in these proceedings have not been paid, and that a claim for the abatement of said taxes is pending before the Commissioner of Internal Revenue, under Section 5949 (Sec. 3226, R. S., U. S.) of the Compilation of United States Statutes 1916. Under such facts, in accord with the terms of Section 5949 (Sec. 3226, R. S., U. S.) no suit, formal or, as here, informal, can be maintained to recover back or to abate such federal taxes in any court, state or federal.

Under Section 5947 of such Compilation no suit, formal or informal, can be maintained to restrain the collection of federal taxes.

Therefore the superior court had no jurisdiction to pass upon the legality of the assessment of the internal revenue taxes in question, or to issue a restraining order relating thereto, because of the provisions of the United States Statutes quoted above.

PENALTIES IMPROPERLY COLLECTED.—If an illegal tax is paid, the fact that it was not paid within the time allowed by law will not prevent any taxpayer from recovering the penalty of 1% a month paid by him for non-payment; for if the tax was illegal it was never due and therefore the penalty was as much unauthorized as the tax itself.[59]

INTEREST ALLOWABLE ON REFUNDS.—Contrary to previous laws, the 1921 law provides that interest must be paid upon all claims for refund or credit allowed. The section seems to apply to refunds arising under all previous laws and covers all internal revenue taxes. Interest when allowed is payable on all claims, whether allowed by the Commissioner voluntarily or by the courts.

Law. Sec. 1324. (a) That upon the allowance of a claim for the refund of or credit for internal revenue taxes paid, interest shall be allowed and paid upon the total amount of such refund or credit at the rate of one-half of 1 per centum per month to the date of such allowance, as follows: (1) if such amount was paid under a specific protest setting forth in detail the basis of and reasons for such protest, from the time when such tax was paid, or (2) if such amount was not paid under protest but pursuant to an additional assessment, from the time such additional assessment was paid, or (3) if no protest was made and the tax was not paid pursuant to an additional assessment, from six months after the date of filing of such claim for refund or credit. The term "additional assessment" as used in this section means a further assessment for a tax of the same character previously paid in part.

(b) Section 177 of the Judicial Code is amended to read as follows:

"Section 177. No interest shall be allowed on any claim up to the time of the rendition of judgment by the Court of Claims, unless upon a contract expressly stipulating for the payment of interest, except that interest may be allowed in any judgment of any court rendered after the passage of the Revenue Act of 1921 against the United States for any internal-revenue tax erroneously or illegally assessed or collected, or for any penalty collected without authority or any sum which was excessive or in any manner wrongfully collected, under the internal-revenue laws."

Note that date when interest begins to run varies with certain conditions. The amendment to the Judicial Code permits interest to be paid on all internal revenue claims allowed by the Court of Claims.

The Solicitor has issued a lengthy opinion dealing with interest on judg-

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[59] *Camp Bird v. Howbert*, 262 Fed. 114. Certiorari denied Mar. 8, 1920, 252 U. S. 579, 64 L. Ed. 725, 40 Sup. Ct. 344.

ment claims. The various points of the opinion are summarized in the official digest which reads as follows:

Ruling. 1. Where suit is instituted directly against the United States in the Court of Claims or the District Court for the recovery of internal revenue taxes alleged to have been erroneously or illegally collected, interest is not allowable *on* such judgment, except:

(*a*) Where suit is instituted directly against the United States in the Court of Claims and a judgment is rendered in favor of the claimant, which judgment is thereafter appealed by the United States and affirmed by the Supreme Court, interest is allowable on such judgment at the rate of 4 per centum per annum from the date of filing the transcript of judgment in the Treasury Department up to and including the date of affirmance by the Supreme Court, but in no case shall interest be allowed after the term of the Supreme Court at which such judgment was affirmed. (Sec. 1, Act of September 30, 1890.)

(*b*) Where a suit is instituted directly against the United States in the District Court, sitting as a Court of Claims, interest is allowable at the rate of 4 per centum per annum from the date of such final judgment or decree until the time when an appropriation is made for the payment of the judgment or decree. (Sec. 10, Act of March 3, 1887.)

2. By virtue of section 1324 (b) of the Revenue Act of 1921, interest may be allowed *in* any judgment for the recovery of internal revenue taxes erroneously or illegally collected where suit is brought directly against the United States in the District Court or the Court of Claims, and when so allowed by the court must be refunded with the tax. Where interest is not allowed in the judgment by the court it can not be allowed by way of refund.

3. Where suit is instituted against a collector of internal revenue for the recovery of taxes alleged to have been erroneously or illegally collected interest may be allowed by the court *in* the judgment, and when so allowed must be refunded with the tax. Where interest is not allowed in the judgment by the court it can not be allowed by way of refund.

4. Interest is allowable against the United States only when specifically provided for by law, and if the law does not provide for interest, a provision in a judgment of a court that the United States pay interest would not be sufficient authority for an administrative officer to pay the same. . . . . (I-39 522; Sol Op. 143.)

The position of the Solicitor is stated in the detailed opinion as follows:

Ruling. Section 1324 (b) of the 1921 Act in effect simply extends the allowance of interest prior to judgment in the case of suits brought directly against the United States and was not designed to permit of allowance of interest after judgment, nor does said section require that interest be paid; it simply permits the court to allow it, and, where the court does not allow it, it is not to be refunded.

Sec. 1324 (a) provides "that upon the allowance of a claim for refund . . . . for internal revenue taxes paid, interest *shall be allowed and paid.*" Before a suit can be instituted a claim for refund must be filed. A suit in effect requests the court to compel the Commissioner to make the refund. Any interest received, whether by suit or not, should be credited to interest. Such interest is taxable income.

MAY GOVERNMENT OPEN UP THE ENTIRE RETURN?—

Ruling. . . . . Where an action for money had and received is brought against a collector of internal revenue for the amount of an additional tax paid on net income, the taxpayer is entitled to recover only such amount as is in reality greater than the tax which should have been assessed under the law as properly interpreted and applied. The fact that the Commissioner in assessing the tax erroneously allowed some deductions for depreciation does not operate as an estoppel against the collector or against the United States, as it is well settled that no assessment of the Commissioner is necessary for the collection of the tax, at least in a direct action by the United States; nor does it make any difference that an assessment has been made, for in spite of the assessment and of the expiration of the period within which an amended assessment can be made, the United States may still sue for the amount actually due. It is immaterial that suit is in form against the collector, because the recovery in the end comes from the

United States, so that even if the collector were personally estopped, that estoppel under the circumstances does not apply against the United States. The conclusion is reached therefore that sums due the United States as determined by the court in suit against a collector of internal revenue are a valid offset as against the amount found due the taxpayer, though such sums include items which the Commissioner did not claim to be due the United States when considering the return for purposes of assessment. (C. B. 1, p. 258; T. D. 2882 (2).)

If limitation period has run against government before any counterclaim is made, it is doubtful if entire return may be opened up. If taxpayer filed a claim for refund for a certain item and also instituted suit within limitation period, the government would certainly contend that the suit could include only the specific item claimed. In other words, after the period had expired, the claim could not be amended to include other items. District Court for Western Division of Western District of Missouri[60] has held that a suit may not include items which have not been presented to the Commssioner.

Ruling. . . . . A taxpayer can not claim a deduction in court for the first time where, in its claim for refund filed precedent to bringing suit, it did not claim the right to such deduction or assert that it had failed to take it in computing net income in its return, or that it had failed to take credit for it, and where, consequently, a claim for the deduction was never presented to the Commissioner of Internal Revenue for his decision. . . . . (C. B. 4, p. 266; Digest T. D. 3164; Ct. D. 11.)

CLAIM FOR REFUND OF SUMS RECOVERED BY SUIT.—The following regulation sets forth detailed procedure necessary for a taxpayer to secure refund of taxes or penalties erroneously collected by the government after he has brought suit and secured judgment.

Regulation. (*a*) Claims by taxpayers for the amount of a judgment representing taxes or penalties erroneously collected should be made on Form 843. The claimant should state the grounds of his claim under oath, giving the names of all the parties to the suit, the cause of action, the date of its commencement, the date of the judgment, the court in which it was recovered, and its amount. To this affidavit there should be annexed a certified copy of the final judgment, a certificate of probable cause, and an itemized bill of the costs paid receipted by the clerk or other proper officer of the court, together with a certified copy of the docket entries of the court in the case or so much thereof as may be required by the Commissioner. When a recovery is had in any suit or proceeding against a collector or other internal revenue officer for any act done by him, or for the recovery of any money exacted by or paid to him and by him paid into the Treasury, in the performance of his official duty, and the court certifies that there was probable cause for the act done by the collector or other officer, or that he acted under the directions of the Secretary of the Treasury, or other proper officer of the Government, no execution shall issue against such collector or other officer, but the amount so recovered shall, upon final judgment, be provided for and paid out of the proper appropriation from the Treasury. . . . . (*b*) If the judgment debtor shall have already paid the amount recovered against him, the claim should be made in his name. There should also be a certificate of the clerk of the court in which the judgment was recovered (or other satisfactory evidence), showing that the judgment has been satisfied and specifying the exact sum paid in its satisfaction, with a detail of all items of costs which were paid by the judgment debtor or for which he is liable. . . . . (Art. 1051.)

APPROPRIATIONS FOR PAYING REFUNDS.—

Law. Sec. 1317. That the paragraph of section 3689 of the Revised Statutes, as amended, reading as follows: "Refunding taxes illegally collected (internal revenue): To refund and pay back duties erroneously or illegally assessed or collected under the internal revenue laws," is repealed from and after June 30, 1920; and the Secretary of the Treasury shall submit for the fiscal year 1921, and annually thereafter, an estimate of appropriations to refund and pay back duties or taxes erroneously or illegally assessed or collected under the internal-revenue laws, and to pay judgments, includ-

[60] *Kemper Military School* v. *Crutchley*, 274 Fed. 125.

ing interest and costs, rendered for taxes or penalties erroneously or illegally assessed or collected under the internal-revenue laws.

VALIDITY OF TAX DETERMINED BY BANKRUPTCY COURT.—In the cases of *In re General Film Corporation* and *U. S.* v. *Kellogg*,[61] the government filed proofs of claim against bankrupt for additional taxes and interest. Trustee in bankruptcy objected to claims and court disallowed them. The government claimed that the only remedy open to trustee for correcting any error was to pay the taxes and then proceed under Rev. Stat., Sec. 3226, by appealing to the Commissioner for refund and subsequently bringing suit.

Decision. We regard this section (Section 64(a) of the Bankruptcy Act) as binding upon the government because it is named therein and, while conferring priority, as giving the bankruptcy court the power to hear and determine any question that arises as to the amount or legality of a tax assessed by it. The provision applies to taxes of all the persons mentioned, and we could not differentiate the government from the other persons in the absence of language justifying it.

But section 3226, U. S. Rev. Stat., could under no circumstances apply to the case under consideration because the trustee is not seeking to maintain a suit for the recovery of internal revenue taxes illegally assessed. *Clinkenbeard* v. *United States*, 21 Wall. 65, 22 L. Ed. 477; *United States* v. *Nebraska Distilling Co.*, 80 Fed. 285, 25 C. C. A. 418.

NO REOPENING OF CASE AFTER FINAL DETERMINATION.—Secs. 1312 and 1313 of the 1921 law provide that taxpayer and Commissioner may by agreement finally close a case. After this agreement has been made, neither may reopen the case.

FRAUD OR UNDERSTATEMENT.—

Law. Sec. 1323. That section 3225 of the Revised Statutes of the United States, as amended, is reenacted without change as follows:

"Section 3225. When a second assessment is made in case of any list, statement, or return, which in the opinion of the collector or deputy collector was false or fraudulent, or contained any understatement or undervaluation, such assessment shall not be remitted, nor shall taxes collected under such assessment be refunded, or paid back, or recovered by any suit, unless it is proved that such list, statement, or return was not willfully false or fraudulent and did not contain any willful understatement or undervaluation."

Information at the Source

PURPOSE.—In the revision of the income tax law in 1917, which is followed in the 1918 and 1921 laws, a system of "information at the source" was adopted, except as to non-resident aliens and certain corporation mortgage interest. This system requires returns of information concerning certain payments made by individuals and corporations, to enable the government to see that recipients of some classes of taxable income report and pay taxes thereon.

CLASSIFICATION OF INFORMATION RETURNS.—Returns of information may be divided into the following groups:

1. Returns by corporations of dividends paid to stockholders.
2. Returns by brokers of profits or losses of customers.
3. Returns by employers, fiduciaries, lessees, mortgagors or others of all payments of fixed or determinable income, such as salaries, rent, mortgage interest, etc.

[61] 274 Fed. 903; see also *In re Anderson*, 275 Fed. 397; aff'd 279 Fed. 525.

4. Ownership certificates, required in the collection of interest on corporation bonds and dividends on foreign stocks.
5. "Withholding" returns, required in the case of fixed or determinable income payable to non-resident aliens or foreign corporations.

RETURNS BY CORPORATIONS OF DIVIDENDS PAID TO STOCKHOLDERS.—

Law. Sec. 254. That every corporation subject to the tax imposed by this title and every personal service corporation shall, when required by the Commissioner, render a correct return, duly verified under oath, of its payments of dividends, stating the name and address of each stockholder, the number of shares owned by him, and the amount of dividends paid to him.

Regulation. When directed by the Commissioner, either specially or by general regulation, every domestic or resident foreign corporation . . . . shall render a return on Form 1097 of its payments of dividends and distributions to stockholders for such period as may be specified, stating the name and address of each stockholder, the number and class of shares owned by him, the date and amount of each dividend paid him, and when the surplus out of which it was paid was accumulated. (Art. 1060.)

RETURNS BY BROKERS.—

Law. Sec. 255. That every individual, corporation, or partnership doing business as a broker shall, when required by the Commissioner, render a correct return duly verified under oath, under such rules and regulations as the Commissioner, with the approval of the Secretary, may prescribe, showing the names of customers for whom such individual, corporation, or partnership has transacted any business, with such details as to the profits, losses, or other information which the Commissioner may require, as to each of such customers, as will enable the Commissioner to determine whether all income tax due on profits or gains of such customers has been paid.

Regulation. When directed by the Commissioner, either specially or by general regulation, every person doing business as a broker shall render a return on Form 1100, showing the names and addresses of customers to whom payments were made or for whom business was transacted during the calendar year or other specified period next preceding and giving the other information called for by the form. (Art. 1065.)

RETURNS OF FIXED OR DETERMINABLE INCOME.—The law requires returns of information only when the income is fixed or determinable. It is not necessary that the income be annual or periodical, as stipulated in the requirement for withholding.

Regulation. . . . . (*a*) Income is fixed when it is to be paid in amounts definitely predetermined. On the other hand, it is determinable whenever there is a basis of calculation by which the amount to be paid may be ascertained. . . . . (Art. 362.)

It has been held that where a lease provides for a payment of rental in crop shares, the landlord and tenant sharing proportionately the expenses and dividing the proceeds, such payments are not fixed and determinable and need not be reported.[62]

Commission on account of a single transaction has been held not to be fixed or determinable annual income.[63] Income credited but not paid is subject to provisions of Art. 362.[64] Fees for professional services should be included in information returns.[65] Earnings of lawyers and doctors are not usually within the purview of this provision of the law (unless paid a regular retainer).[66]

It has been held that cash deposits by a tenant to guarantee the carrying out of the provisions of his lease are not necessarily income for year in which

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[62] Treasury Bulletin "B," p. 38; also C. B. 1, p. 261; O. D. 115.
[63] C. B. 4, p. 232; O. D. 907.
[64] C. B. 2, p. 249; O. D. 428.
[65] C. B. 2, p. 248; O. D. 416.
[66] Treasury Bulletin "B," p. 11.

received, but should be reported as income for years in which applicable as rent.[67]

Ruling. A receiver in partition proceedings is required to file returns of information covering payments of commissions, attorney's fees, and other fixed or determinable income of $1,000 or more made to any person during the taxable year. (C. B. 5, p. 252; O. D. 1149.)

Persons Required to File Returns of Fixed or Determinable Income.—

Law. Sec. 256. That all individuals, corporations, and partnerships, in whatever capacity acting, including lessees or mortgagors of real or personal property, fiduciaries, and employers, making payment to another individual, corporation,[68] or partnership, of interest, rent,

Description of payment.—

salaries, wages, premiums, annuities, compensations, remunerations, emoluments, or other fixed or determinable gains, profits, and income (other than payments described in section 254 and 255), [The exceptions are dividends and transactions by brokers]

Amount to Be Reported.—

of $1,000 or more in any taxable year,

Employees of United States Government Must Make Return.—

or, in the case of such payments made by the United States, the officers or employees of the United States having information as to such payments and required to make returns in regard thereto by the regulations hereinafter provided for,

Form of Returns.—

shall render a true and accurate return to the Commissioner, under such regulations and in such form and manner and to such extent as may be prescribed by him with the approval of the Secretary, setting forth the amount of such gains, profits, and income, and the name and address of the recipient of such payment. . . . .

The regulation covering this matter follows:

Regulation. All persons making payment[69] to another person of fixed or determinable income of $1,000 or more in a taxable year must render a return thereof to the Commissioner for the preceding calendar year on or before March 15 of each year, except as specified in articles 1073, 1074, 1075, 1076, and 1079. The return shall be made in each case on Form 1099, accompanied by a letter of transmittal on Form 1096 showing the number of returns filed. The street and number where the recipient of the payment lives shall be stated, if possible. Where no present address is available, the last known post-office address must be given. Although to make necessary a return of information the income must be fixed or determinable, it need not be annual or periodical.[70] . . . . (Art. 1071.)

Returns Cover Calendar Year.—

Law. Sec. 256. . . . . The provisions of this section shall apply to the calendar year 1921 and each calendar year thereafter, ...

The instructions on Form 1099 (1920) state:

One of these forms must be filled in for each person to whom income, as described on this form, was paid during the calendar year. . . . .

Returns Under Systems of "Information at Source" and "Payment at Source."—Returns are required of the various classes of withholding agents covered by the regulations.

Corporations paying interest on bonds and similar forms of indebtedness

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[67] C. B. I-1, p. 324; I. T. 1291.

[68] Payments to corporations need not be reported (Art. 1074).

[69] These returns are required for actual amounts *paid or credited and made available* during the calendar year equal to or exceeding $1,000. (C. B. 2, p. 249; O. D. 428.)

[70] When withholding is required the income must be annual or periodical as well as fixed or determinable [Sec. 221 (a)].

are required to report the amount withheld in any month on or before the 20th day of the following month, using for this purpose Form 1012. At the close of the year and on or before Mar. 1 of the following year, these monthly returns are summarized on an annual return, using Form 1013.

Monthly returns referred to above are not specifically required by the statute, but are demanded under regulations prescribed by the Commissioner in accordance with the statute as a convenience in reporting this tax. Their purpose is to enable the Treasury to audit and check from month to month the items therein reported, thus avoiding congestion at close of year. The annual reports, however, are required by the statute, and failure to file them subjects withholding agent to penalties the same as those for failure to file annual returns of net income. An extension of time may be obtained for filing the list returns in same manner and for same reasons as those applying to returns of net income.

Tax withheld from income other than bond interest will be accounted for on income tax Form 1042, and separate reports of payments entered in Form 1042 will be made on Form 1098.

Employers, tenants, and debtors must report annually on Form 1099 amounts of $1,000 or more, paid for salaries, wages, rents, interest, premiums, etc., during the year. In the case of collection of bond interest and of foreign dividends the report is not limited to amounts in excess of $1,000. As one person, firm, or corporation may find it necessary to fill out more than one Form 1099, it will be necessary to accompany the forms with a letter of transmittal, known as Form 1096. The form used for non-resident aliens is 1098.

Affiliated corporations do not make a consolidated report for purposes of information. Form 1099 is to be used by each corporation separately in reporting payments. However, where two corporations were merged during the year 1921, information returns showing payments made by both corporations should be filed by the continuing corporation.[71]

The present regulation omits the requirement of reporting on Form 1096 the aggregate amount represented by the separate Form 1099. The revised Form 1096 requires only a statement of the number of Forms 1099 attached thereto.

Payments to Employees.—Returns of information regarding payments to employees, other than those against whom withholding is required, are specifically covered as follows:

Regulation. The names of all employees to whom payments of $1,000 or over a year are made, whether such total sum is made up of wages, salaries, commissions, or compensation in any other form, must be reported. Heads of branch offices and subcontractors employing labor, who keep the only complete record of payments therefor, should file returns of information in regard to such payments directly with the Commissioner. When both main office and branch office have adequate records, the return should be filed by the main office. In case an employer has a large number of employees and the computation of exact amounts paid during the calendar year will result in an undue hardship, careful estimates may be made on the basis of any representative month, and unless the yearly payment based on this estimate in the case of any employee amounts to $1,000 or more, no return of payments to such employee is required. (Art. 1072.)

The present regulation permits employers who have a large number of employees to make returns on **estimated payments.** The old regulation extended this privilege only to employers having a large number of employees who were being moved from job to job.

[71] C. B. I-1, p. 324; I. T. 1313.

If an employer is required under a state law to withhold a tax on an employee's salary, the gross payment before deduction should be reported.

Ruling. In executing Form 1099, an employer who is required to withhold tax from an employee under a State income-tax law, should report on such form the amount of the salary paid to the employee plus the amount of the tax withheld. The employee should report the same amount in his personal return on Form 1040 or Form 1040A as the case may be. (C. B. 2, p. 249; O. D. 401.)

Value of living quarters and board furnished employees[72] must be considered by employers in preparing returns of information:

Rulings. . . . . A person receives cash compensation for services rendered, and in addition thereto living quarters; when such quarters are furnished for the benefit and convenience of employees, the amount of cash compensation plus the value of living quarters must be returned. When, however, living quarters are furnished for the convenience of the employer only, the value thereof need not be returned. Board and lodging furnished seamen in addition to their cash compensation is held to be supplied for the convenience of the employer. . . . . (Treasury Bulletin "B," p. 38.)

The value to a domestic servant of the board and lodging received as part of his compensation for services rendered is deemed to be the same amount which he would be required to pay for board and lodging elsewhere than in his employer's household.

If the value of the board and lodging added to the cash compensation equals or exceeds $1,000 an employer is required to report such amount on Forms 1099 and 1096. The value of the board and lodging should be entered separately on Form 1099, as evidence of the fact that such value has been considered in computing the total amount received by the servant. (C. B. 4, p. 348; O. D. 874.)

In view of the foregoing, employees should be advised by employers regarding the tax to which they are subject.

Return of Information by Partnerships and Fiduciaries.—Information returns on Forms 1099 and 1096 are required in all above cases regardless of whether such income amounts to more or less than $1,000 annually.[73] Salaries paid to members of partnerships must also be included in returns of information. If a fiduciary receives a salary from an estate, an information return must be filed. All payments by partnerships and fiduciaries to employees must be reported if such payments equal or exceed the statutory minimum.

Many taxpayers object to making information returns for members of partnerships and for beneficiaries, because such information is shown on partnership return 1065 and fiduciary return 1041. This duplication of information returns was the subject of a conference at Washington between the Secretary of the Treasury and representative bankers and others. It resulted in the elimination of Forms 1096 and 1099 in these cases, as stated in the instructions on the present Form 1096.

Returns of Payments to Non-Resident Aliens.[74]—

Regulation. In the case of payments of annual or periodical income to nonresident alien individuals, partnerships composed in whole or in part of nonresident aliens and not having an office or place of business within the United States, or to foreign corporations not engaged in trade or business within the United States and not having any office or place of business therein, the returns filed by withholding agents on Form 1042 shall constitute and be treated as returns of information. . . . . (Art. 1075.)

Form 1042 is the annual list return of the withholding agent which must be filed on or before Mar. 1.

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[72] The 1921 law specifically provides that the rental value of a minister's house is not taxable and should therefore not be reported.

[73] See Treasury Bulletin "B," p. 39; also C. B. 4, p. 348; Mim. 2708.

[74] If the income of non-resident aliens is not fixed or determinable, no information return is required. (C. B. 3, p. 312; O. D. 673.)

Ruling. A withholding agent is not relieved from obligation to pay to the Federal Government the amount of tax correctly withheld from the income of a nonresident alien by reason of the fact that the nonresident alien has filed a return showing no tax liability. (C. B. 5, p. 194; O. D. 985.)

Where No Return of Information on Forms 1099 and 1096 Is Required.—As previously stated, the statute gives the Commissioner discretionary powers as to the class of payments to be reported on information returns 1099 and 1096. The list of specific payments which require no information returns follows:

Regulation. Payments of the following character, although over $1,000, need not be reported in returns of information on Form 1099: (*a*) payments of interest on obligations of the United States; (*b*) dividends paid by domestic or resident foreign corporations; (*c*) payments by a broker to his customers; (*d*) payments of any type made to corporations; (*e*) bills paid for merchandise, telegrams, telephone, freight, storage, professional services, and similar charges; (*f*) annuities representing the return of capital; (*g*) payments of rent made to real estate agents (but the agent must report payments to the landlord if they amount to $1,000 or more annually); (*h*) payments made by branches of business houses located in foreign countries to alien employees serving in foreign countries; and (*i*) payments made by the United States Government to sailors and soldiers and to its civilian employees. (Art. 1073.)

The instructions on Form 1096 state that no return on Form 1099 is required in case of "Distributions to members of a partnership . . . . and beneficiaries."

Ruling. An employer is not required to report on Form 1099 the amount representing compensation for personal injuries or sickness paid to an employee. (C. B. 4, p. 349; Digest O. D. 858.)

Although several types of income paid by states or political subdivisions thereof are exempt from tax, there are numerous instances in which taxable income is paid. Such taxable income must be reported:

Ruling. A department of municipal government is required to file a return of information as provided in section 256 of the Revenue Act of 1918, showing payments of fixed or determinable gains, profits, and income of $1,000 or over in any taxable year, excluding from the return, however, payments made as salary or wages to officials or employees of a State or political subdivision thereof, and payments of interest on the obligations of a State or political subdivision thereof. (C. B. 2, p. 249; O. D. 470.)

HEAVY PENALTIES FOR FAILURE TO FURNISH INFORMATION.—The specific penalties for failure or refusal to furnish information were increased in the 1918 law.[75]

Regulation. A penalty of not more than $1,000 attaches for failure punctually to make a required return, whether of income, withholding or information, or to pay or collect a required tax. If the failure is willful, however, or an attempt is made to defeat or evade the tax, the offender is liable to imprisonment and to a fine of not more than $10,000 and costs. See also the act of July 5, 1884. In addition to these specific penalties *ad valorem* penalties are imposed in various cases. An *ad valorem* penalty is assessed and collected as a part of the tax, while a specific penalty is enforceable only by suit. . . . . (Art. 1055.)

Ownership Certificates

INFORMATION RETURNS OF BOND INTEREST AND FOREIGN DIVIDENDS.—The statutory provision as to information returns in case of bond interest and foreign dividends is as follows:

Law. Sec. 256. . . . . Such returns may be required, regardless of amounts, (1) in

[75] Sec. 253. The 1921 law re-enacted this section without change.

the case of payments of interest upon bonds, mortgages, deeds of trust, or other similar obligations of corporations, and (2) in the case of collections of items (not payable in the United States) of interest upon the bonds of foreign countries and interest upon the bonds of and dividends from foreign corporations by individuals, corporations, or partnerships, undertaking as a matter of business or for profit the collection of foreign payments of such interest or dividends by means of coupons, checks, or bills of exchange. . . . .

Regulations. The owners of bonds or other obligations, except domestic and resident corporations, whether or not such bonds or other obligations contain a tax-free covenant, issued by domestic or resident foreign corporations, when presenting interest coupons for payment shall file a certificate of ownership for each issue of bonds, showing the name and address of the debtor corporation, the name and address[76] of the owner of the bonds, the nature of the obligations, the amount of interest and its due date,[77] and the amount of any tax withheld. No ownership certificates need be filed in the case of interest payments on bonds the income from which is not required to be included in gross income, nor in the case of any obligations of the United States. . . . (Art. 365.)

In the case of payments of interest, regardless of amount, upon bonds and similar obligations of domestic or resident foreign corporations, the original ownership certificates, when duly filed, shall constitute and be treated as returns of information. If a bondholder files no ownership certificate in the case of payments of interest on registered bonds, the withholding agent shall make out such a certificate in each instance and file it with his monthly return. No ownership certificate is required to be filed in case bonds or other obligations are owned by domestic or resident corporations. . . . (Art. 1074.)

In the collection of interest on corporation bonds, whether in coupon or registered form, bondholder (unless it is itself a corporation) is required to file an ownership certificate as to each series of coupons or registered interest. One certificate may cover any number of coupons of same due date and same issue of bonds.

Ruling. The following is a schedule of ownership certificates required to be used under the Revenue Act of 1921:

Classification of owner.	Bonds of domestic or resident corporations.	
	Containing tax-free clause.	Not containing tax-free clause.
Citizen or resident of the United States. (Individual or fiduciary.) *Personal exemption not claimed.*	Form 1000, line 1.	
Citizen or resident of the United States. (Individual or fiduciary.) *Personal exemption claimed or interest not subject to tax at the source.*	Form 1001, line 1.	Form 1001, line 2.
Domestic or resident partnership..........	Form 1000, line 2.	Form 1001, line 3.
Nonresident alien. (Individual or fiduciary)	Form 1000, line 3.	Form 1000, line 3.
Partnership composed in whole or in part of nonresident aliens and having no office or place of business in the United States.	Form 1000, line 4.	Form 1000, line 4.
Foreign corporation not having an office or place of business in the United States and not engaged in trade or business therein.	Form 1000, line 5.	Form 1000, line 5.
Unknown owner........................	Form 1000, line 6.	Form 1000, line 6.

[76] It is not necessary to enter the street address of the debtor corporation on the ownership certificate. (C. B. 3, p. 216; O. D. 615.)

[77] Bondholders frequently make the error of entering the maturity date of the bond, instead of the due and payment date of the coupon.

Classification of owner.	Bonds of foreign corporations or foreign Governments.		Stock of foreign corporations.
	Containing tax-free clause and having paying agent in the United States.	Not containing tax-free clause and whether or not having paying agent in the United States.	
Citizen or resident of the United States. (Individual or fiduciary.) *Personal exemption not claimed.*	Form 1000, line 1.	....	
Citizen or resident of the United States. (Individual or fiduciary.) *Personal exemption claimed or income not subject to tax at the source.*	Form 1001A, line 1.	Form 1001A, line 1.	Form 1001A, line 1.
Domestic or resident partnership........	Form 1000, line 2.	Form 1001A, line 2.	Form 1001A, line 2.
Unknown owner......	Form 1000, line 6.	....	

There is no space provided on Form 1001A for reporting income when the owner is unknown. If the foreign item is an interest coupon on bonds not containing a tax-free covenant clause, issued by a foreign Government or a foreign corporation, or is a dividend check on stock issued by a foreign corporation, the procedure set forth in the second paragraph of article 1078, Regulations 62, should be followed. There is ample space on Form 1001A below the word "partnership" for the insertion of the word "unknown" under classification of owner, and for entering the income in the appropriate column. (C. B. I-1, p. 222; I. T. 1331.)

The regulations provide that ownership certificates shall constitute and be treated as returns of information; but no ownership certificate is required to be filed in case bonds are owned by domestic or resident foreign corporations.

DUTY OF BANKS AND COLLECTING AGENCIES.—All ownership certificates should contain complete information, or payment should be refused. The interest of both taxpayers and agents demands this. Taxpayers who fail to file the required form automatically waive the credit which they might otherwise claim for tax constructively withheld at the source. Once a form has been accepted by banks or other collecting agents, the responsibility for its corrections lies with such banks or agents. The certificates should always bear the signature of the owner or his agent. Use of ownership certificates takes the place of information returns 1099 and 1096 so far as bond interest payments are concerned.

Regulation. In the case of payments of interest, regardless of amount, upon bonds and similar obligations of domestic or resident foreign corporations, the original ownership certificates, when duly filed, shall constitute and be treated as returns of information. . . . . (Art. 1074.)

Rulings. If banks and other collecting agents accept coupons for collection to which are attached incomplete or otherwise improperly executed ownership certificates, such banks or collecting agents become a party to the filing of incomplete returns of information and shall upon demand of the debtor furnish the name and address of the owner of the coupons so that such ownership certificates may, when filed, be accepted as re-

turns of information in accordance with the provisions of the regulations issued under section 256 of the Revenue Act of 1918.[78] (C. B. 4, p. 232; Digest Mim. 2725.)

Paying agents must not require bank cashing coupons to secure ownership certificates unless law and regulations require certificates. Department cannot prescribe definite ruling for inter-banking transactions. (Telegram to National City Co., New York, N. Y., signed by Commissioner D. H. Blair, and dated Mar. 9, 1922.)

INTEREST COUPONS PRESENTED WITHOUT OWNERSHIP CERTIFICATES.—

Regulation.—When interest coupons are received unaccompanied by certificates of ownership, unless the first bank be satisfied that the owner is a domestic or resident corporation, the first bank shall require of the payee a statement showing the name and address of the payee, the name and address of the debtor corporation, the date of maturity of the interest, the name and address of the person from whom the coupons were received, the amount of the interest, and a statement that the owner of the bonds is unknown to the payee. Such statement shall be forwarded to the Commissioner with the monthly return on Form 1012. The first bank receiving such coupons shall also prepare a certificate on Form 1000, crossing out "owner" and inserting "payee" and entering the amount of interest on line 6, and shall stamp or write across the face of the certificate "Statement furnished," adding the name of the bank. (Art. 369.)

The affidavit form is no longer required, a mere statement only being necessary. If the first bank is satisfied that the owner of the coupon is a corporation, no statement is now required.

Ruling. Bank cashing coupons should exercise ordinary business care in ascertaining owner of bonds in cases where coupons are unaccompanied by ownership certificates. If owner is unknown, certificate should be prepared as required by Article 369. Written statement in lieu of ownership certificate not required in connection with interest payments on bonds owned by domestic or resident corporations. (Telegram to National City Co., New York, N. Y., signed by Deputy Commissioner E. H. Batson, dated Mar. 7, 1922.)

CERTIFICATE WHEN WITHHOLDING.—

Regulation. For the purposes of article 365 Form 1000 shall be used (*a*) by citizens or residents of the United States when no personal exemption or credit is claimed against interest on bonds containing a tax-free covenant; (*b*) by nonresident alien individuals, by partnerships composed in whole or in part of nonresident aliens and not having an office or place of business within the United States, and by foreign corporations not engaged in trade or business within the United States and not having any office or place of business therein, whether or not such bonds contain a tax-free covenant; (*c*) by partnerships, resident or nonresident, and (prior to January 1, 1922) personal service corporations, in the case of bonds containing a tax-free covenant; and (*d*) where the owner is unknown to the withholding agent. (Art. 366.)

Partnerships are now included under (c) and class (d) is entirely new.

CERTIFICATES WHEN NO WITHHOLDING.—

Regulation. For the purposes of article 365, Form 1001 shall be used (*a*) by citizens or residents of the United States when personal exemption is claimed against interest on bonds containing a tax-free covenant and when presenting coupons from bonds not containing a tax-free covenant; (*b*) by domestic and resident partnerships, in the case of bonds not containing a tax-free covenant. In case a citizen or resident alien individual receives interest on bonds containing a tax-free covenant in excess of the amount of personal exemption which the individual may claim, any such excess must be reported on Form 1000. (Art. 367.)

Form 1001 is no longer used by domestic corporations, non-resident partnerships, or foreign corporations.

[78] Also applicable under 1921 law.

USE OF SUBSTITUTE CERTIFICATES.[79]—

Regulation. Resident collecting agents, including responsible banks and bankers receiving interest coupons for collection with ownership certificates attached, may present the coupons with the original certificates to the debtor corporation or its duly authorized withholding agent for collection, or may detach and forward the original certificates directly to the Commissioner, provided each such collecting agent shall substitute for such original certificates its own certificates, Form 1058 or Form 1059, and shall keep a complete record of each transaction, showing (*a*) serial number of item received; (*b*) date received; (*c*) name and address of person from whom received; (*d*) name of debtor corporation; (*e*) class of bonds from which coupons were cut (whether containing a tax-free covenant or not); and (*f*) face amount of coupons. The original certificate for which the certificate of the collecting agent is substituted shall be endorsed, preferably with a rubber stamp, by the collecting agent, as follows:

Owner's certificate No.. ....

....

(Name of collecting agent)

........................., 19..
(Give date of certificate)

The counterpart of the within certificate bearing like number was attached to the coupons within mentioned for delivery to the debtor or withholding agent, by whom the coupons are payable.

For the purpose of identification the substitute certificates shall be numbered consecutively, reverting to the numeral 1 at the beginning of each calendar year, and corresponding numbers given the original certificates of ownership. The use of substitute certificates by collecting agents, banks, and bankers is not permitted, however, in the case of ownership certificates presented with coupons for collection by nonresident alien individuals, partnerships, or corporations. (Art. 368.)

Form 1059 is used instead of Form 1000; Form 1058 instead of Form 1001. The Treasury places the burden on the bank or collecting agent to see that certificates are properly made out. By accepting an ownership certificate, the bank or agent becomes directly responsible for its being made out in accordance with the requirements of law and regulations.

Ruling. . . . . The attention of the Bureau of Internal Revenue has been invited to the fact that in many instances indifference and carelessness has been shown by owners in executing ownership certificates accompanying coupons presented to banks and other collecting agents for collection of the interest on bonds and other obligations of debtors, and also that banks and other collecting agents have been accepting incomplete and improperly executed ownership certificates with such coupons deposited for collection and have been transmitting same to debtors for payment. . . .

Banks and other collecting agents are not required by law or regulations to accept interest coupons for collection. If, however, as a matter of convenience to their customers, they do accept interest coupons for collection, it is their duty to see that the ownership certificates which are executed by the owner of the coupons are properly filled out. These ownership certificates cannot be accepted as returns of information unless they are properly filled out and debtors receiving coupons from banks or collecting agents with incomeplete or otherwise improperly executed ownership certificates are, under the foregoing quoted provisions of Section 256, authorized to demand that the name and address of the owner of the coupons accompanied by incomplete or otherwise improperly executed ownership certificates shall be furnished before the coupons are paid.

If banks and other collecting agents accept coupons for collection to which are attached incomplete or otherwise improperly executed ownership certificates, such banks or collecting agents become a party to the filing of incomplete returns of information and shall upon demand of the debtor furnish the name and address of the owner of the

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[79] Substitute certificates are favored by persons who wish to conceal the identity of bondholders from the debtor corporation or its paying agent.

coupons so that such ownership certificates may, when filed, be accepted as returns of information in accordance with the provisions of the regulations issued under Section 256 of the Revenue Act of 1918. (C. B. 4, p. 232; Mim. 2725.)

CORRECTION OF CERTIFICATES BY BANKS OR COLLECTING AGENTS.—

Ruling. Banks or other collecting agents receiving coupons attached to ownership certificates executed on the wrong form, in order to expedite the collection of the interest, are permitted to transfer the necessary information from the erroneous to the proper form, the following notations being stamped in the lower left-hand corner:

"......................................
(Name and address of bank or collecting agent.)
By......................................"
(Name of official executing certificate.)

The original certificate should be forwarded with the certificate executed on the proper form by the bank or collecting agent, the original certificate bearing the notation substantially as follows: "Superseded by ownership certificate Form . . . . ," designating the form of certificate executed by the bank or collecting agent. (C. B. 2, p. 192; O. D. 562.)

CERTIFICATES TO BE USED BY FIDUCIARIES AND JOINT OWNERS.—

Regulation. When fiduciaries have the control and custody of more than one estate or trust, and such estates and trusts have as assets bonds of corporations and other securities, a certificate of ownership shall be executed for each estate or trust, regardless of the fact that the bonds are of the same issue. When bonds are owned jointly by two or more persons, a separate ownership certificate must be executed in behalf of each of the owners. (Art. 374.)

CERTIFICATES FOR PAYMENTS OF REGISTERED INTEREST.—

Regulation. Ownership certificates are required in connection with interest upon registered bonds the same as interest upon any other class of bonds. If ownership certificates are not furnished by the owner of the bonds, such certificates must be prepared by the debtor corporation or its withholding agent. (*a*) If the bonds contain a tax-free covenant clause, ownership certificates must be prepared on Form 1,000 for the following classes of bondholders: Citizens or residents of the United States, nonresident alien individuals, partnerships, whether foreign or domestic, foreign corporations having no office or place of business within the United States. (*b*) If the bonds do not contain a tax-free covenant clause, Form 1000 shall be prepared in the case of nonresident alien individuals, partnerships composed in whole or in part of nonresident aliens and not having an office or place of business within the United States, or in case the owner is a foreign corporation not engaged in trade or business within the United States and not having an office or place of business therein. If ownership certificates are not filed by a citizen or resident of the United States or a resident partnership in connection with interest payments upon registered bonds not containing a tax-free covenant clause, Form 1001 should be prepared by the debtor corporation or its withholding agent.

Regardless of whether the registered bonds do or do not contain a tax-free covenant clause, no ownership certificate is required in connection with such bonds owned by domestic or resident corporations. (Art. 370.)

Ruling. Where bonds owned by domestic or resident corporations are registered in name of individual, ownership certificate Form 1001 required to be filed, altered to show names and addresses of owner and nominee. (Telegram to Philadelphia Association of Stock Transfer Agents, signed by Deputy Commissioner E. H. Batson, dated June 6, 1922.)

PAYER HAS RIGHT TO DEMAND NAME AND ADDRESS OF RECIPIENT OF INCOME.—

Law. Sec. 256. . . . . When necessary to make effective the provisions of this section the name and address of the recipient of income shall be furnished upon demand of the individual, corporation, or partnership paying the income. . . . .

Regulation. When the person receiving a payment falling within the provisions of the statute for information at the source is not the actual owner of the income received, the name and address of the actual owner shall be furnished upon demand of the individual, corporation or partnership paying the income, and in default of a compliance with such demand the payee becomes liable to the penalties provided. . . . . (Art. 1080.)

Ruling. Official position of person authorized to sign ownership certificates in behalf of corporation and identity of person signing ownership certificates in behalf of partnership required to be disclosed on certificates. (Telegram to the Southern Pacific Co., New York, N. Y., signed by Deputy Commissioner E. H. Batson, and dated June 16, 1921.)

USE OF FORM 1087 (REVISED) TO DISCLOSE OWNERSHIP.—The proper use of this ownership certificate is most conveniently summarized as follows:

Ruling. This ownership certificate [form 1087 (revised)], is designed primarily for the use of a foreign principal to disclose the actual ownership of stock of a domestic corporation registered in the name of his representative in the United States. Unless the disclosure is made to the Commissioner on this form, the record owner will be liable for any additional tax on dividends on stock of domestic corporations or resident foreign corporations. In all cases where the actual owner is a nonresident alien individual, and the record owner a person in the United States, the record owner will be considered for tax purposes to have the receipt, custody, control, and disposal of the dividend income, and must make return for the actual owner, regardless of the amount of income, and pay any surtax found by such return to be due.

When a foreign corporation is the registered owner of stock of a domestic corporation and the actual owner is a nonresident alien, individual or partnership, disclosure of actual ownership should be made on Form 1087 (Revised). This form should be adapted to make disclosure in order that a domestic corporation required to render a return of information as to dividends in accordance with section 254 of the act, may have at its disposal information as to the actual ownership of the stock. . . . . (Treasury Bulletin "B," p. 27.)

CERTIFICATES NOT REQUIRED FOR INTEREST ON OBLIGATIONS OF THE U. S. AND POLITICAL SUBDIVISIONS.—

Law. Sec. 256. . . . . The provisions of this section . . . . shall not apply to the payment of interest on obligations of the United States.

Regulation. . . . . No ownership certificates need be filed in the case of interest payments on bonds the income from which is not required to be included in gross income, nor in the case of any obligations of the United States. . . . . (Art. 365.)

War Finance Corporation bonds are not obligations of the United States.[80] Hence ownership certificates are required in collecting interest on such securities. Ownership certificates are not required in case of municipal bonds and such other bonds the interest from which is exempt from tax.

DUTIES OF BANKS.—

Ruling. Where a debtor corporation fails to withhold the 2 per cent tax on tax-free-covenant bonds, and the owner has filed Form 1000, there is no obligation on the bank receiving the coupons to withhold the tax, as assessment will be made against the debtor or its withholding agent, based on the tax liability as disclosed by the ownership certificates, Form 1000.

A bank purchasing abroad coupons of bonds issued by domestic corporations will be held prima facie to be the recipient of income. Ownership certificates should therefore be secured from original owners of bonds in order that tax may be withheld as provided by law.

Where a promissory note, signed by a corporation, is left with a bank or trust company for collection, such bank or trust company should not require an ownership certificate to be attached.

Ownership certificates are required to be filed with respect to interest payments upon first-mortgage participation bonds issued by a trust company and secured by a real

[80] C. B. 1, p. 185; O. D. 284.

estate mortgage deposited with the trustee. In cases where coupons of the bonds are not accompanied by ownership certificates, the first bank is required to furnish a certificate. Where no ownership certificates are filed in connection with interest upon such registered bonds, the withholding agent will be required to prepare certificates. (Treasury Bulletin "B," p. 31.)

It has been held that in case of interest payments on overdue coupon bonds, interest coupons of which have been exhausted, ownership certificates must be filed when collecting interest, in same manner as if interest coupons were presented for collection.[81]

Use of Stamps and Facsimile Signatures by Banks and Trust Companies.—If proper authorization is obtained from the Commissioner of Internal Revenue, banks and trust companies may use facsimile signatures in executing income tax certificates (substitute or otherwise) issued under their names.[82]

INFORMATION REGARDING FOREIGN ITEMS.—"Foreign items" and source from which information is obtained are expressly stated:

Definition of "Foreign Item."—

Regulation. The term "foreign item," as here used, means any dividend upon the stock of a nonresident foreign corporation or any item of interest upon the bonds of foreign countries or nonresident foreign corporations, whether or not such dividend or interest is paid in the United States or by check drawn on a domestic bank.

Source of Information.—

(*a*) Wherever a foreign country or nonresident foreign corporation issuing bonds has appointed a paying agent in this country, charged with the duty of paying the interest upon such bonds, such paying agent shall be the source of information. If such foreign country or foreign corporation has no such agent, then the last bank or collecting agent in this country shall be the source of information.

(*b*) In the case of dividends on the stock of a nonresident foreign corporation, however, the first bank or collecting agent accepting such item for collection shall be the source of information. No return of information is required with respect to foreign items owned by a nonresident alien individual, a foreign partnership, or a foreign corporation, provided the first bank or collecting agent is satisfied as to such ownership. In such case the foreign item may be stamped "foreign owner." (Art. 1076.)

License Required for the Collection of Foreign Items.—

Law. Sec. 259. That all individuals, corporations, or partnerships undertaking as a matter of business or for profit the collection of foreign payments of interest or dividends by means of coupons, checks, or bills of exchange shall obtain a license from the Commissioner and shall be subject to such regulations enabling the Government to obtain the information required under this title as the Commissioner, with the approval of the Secretary, shall prescribe; and whoever knowingly undertakes to collect such payments without having obtained a license therefor, or without complying with such regulations, shall be guilty of a misdemeanor and shall be fined not more than $5,000, or imprisoned for not more than one year, or both.

Regulation. Banks or agents collecting foreign items, as defined in article 1076, and required by article 1079 to make returns of information with respect thereto, must obtain a license from the Commissioner to engage in such business. Application Form 1017 for such license may be procured from collectors. The license is issued without cost on Form 1010. Foreign items shall not be accepted for collection by any bank or collecting agent so licensed unless properly indorsed or accompanied by proper ownership certificates giving all the information called for by such certificate. . . . . (Art. 1111.)

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[81] C. B. 2, p. 191; O. D. 392.

[82] Either rubber stamps or printed signatures may be used. This concession was made to facilitate collection of coupons by banks. It avoids much delay and inconvenience.

Ownership Certificates for Foreign Items.

Regulation. When bonds of foreign countries, or bonds or stocks of non resident foreign corporations, are owned by citizens or residents of the United States, individual or fiduciary, or by resident partnerships, ownership certificate Form 1001 A shall be executed by the actual owner or by his duly authorized agent when presenting the item for collection, whether such item is a dividend or an interest payment, except in the case of a foreign country or a foreign corporation having a fiscal agent or a paying agent in this country and issuing bonds which contain a tax free covenant clause. In such excepted case the fiscal agent or paying agent is required to withhold a tax of 2 per cent from the interest on such bonds and ownership certificate Form 1000, modified to show the name and address of the fiscal agent or the paying agent, should be used unless the owner (if so entitled) desires to claim exemption, in which case Form 1001A should be filed.[33] . . . (Art. 1077.)

Domestic corporations are no longer required to execute Form 1001A.

Ruling. Ownership certificates representing interest on bonds owned by non resident aliens bearing addresses of domestic bankers in lieu of the residences of the aliens, will be accepted. (C. B. 4, p. 233; O. D. 908.)

No Ownership Certificates Required for Certain Foreign Dividends.—Following the principle in force under the 1918 law, it is presumed that ownership certificates will not be required in collecting dividends from foreign corporations which are free from normal tax.[34] Ownership certificates will be necessary in the case of dividends from other foreign corporations.

Foreign Items Presented for Collection Unaccompanied by Ownership Certificates.

Regulation. If the foreign item is an interest coupon detached from bonds containing a tax free covenant clause, issued by a foreign country or corporation having a paying agent in the United States, a statement and ownership certificate, Form 1000, shall be furnished as provided in article 369.

In the case of other foreign items which are received unaccompanied by an ownership certificate and the owner is unknown, a statement shall be required of the payee, showing the name and address of the payee, the name and address of the debtor organization, the date of the dividend check or the maturity of the interest coupon, the name and address of the person from whom the dividend check or interest coupon was received, and a statement that the owner of the securities is unknown to the payee. The first bank receiving such foreign item shall prepare a certificate of ownership, Form 1001A, crossing out the word "owner" and substituting therefor the word "payee." The first bank shall stamp or write across the face of the certificate "statement furnished," adding the name of the bank. Thereupon the statement and certificate shall be forwarded to the Commissioner as provided in article 1079. (Art. 1078.)

Returns of Information for Foreign Items. The following regulation applies to use of ownership certificates in collection of items (not payable in United States) of interest on bonds of foreign countries, and interest on bonds or dividends on stock of non resident foreign corporations.

Regulation. In the case of collections of foreign items, regardless of amount, the required ownership certificates, when duly filed, shall constitute and be treated as returns of information. (a) In the case of dividends, as to which the first bank or collecting agent is the source of information, it shall detach the ownership certificate and endorse on the item the words, "Certificate detached and information furnished," adding its name and address. When foreign items have been indorsed as above prescribed, the certificates shall be forwarded to the Commissioner on or before the 20th day of the month following that during which the items were accepted, accompanied by a return on Form 1096A showing the number of certificates. An annual return on

[33] No attempt is made to tax non resident aliens on income which simply passes through American banks for collection and is not income derived from sources within the United States.

[34] See Secs. 216 (a), 234 (a-6).

Form 1096B shall be forwarded to the Commissioner not later than March 15 of each year, on which shall be given a summary of the monthly returns. (*b*) In the case of interest items, as to which the paying agent or the last bank or collecting agent in this country is the source of information, the ownership certificate shall accompany the coupon to such agent or source of information, who shall forward the ownership certificate to the Commissioner in the same manner as above provided with respect to dividend items. Where ownership certificate Form 1000 is used, a monthly return shall be made on Form 1012 and an annual return on Form 1013, as provided in articles 361–375. . . . . (Art. 1079.)

Name of paying agent should be shown on Forms 1012 and 1013 when they are used to make returns of ownership certificates covering foreign interest. Aggregate amount of foreign items is no longer reported on Form 1096A.

Provisions of subdivision (b) above are applicable also to foreign registered bonds.[85]

Payment of Tax at Source

APPLICATION.—The 1917 law substituted a system of "information at the source" for collection at source.[86] Withholding was abolished, excepting only the cases of non-resident aliens and interest on bonds containing a so-called tax-free[87] covenant clause. The withholding provisions of the 1921 law are substantially the same as those of the two laws preceding it.

Sec. 221 of the 1921 law deals with the payment or withholding of tax at the source.

So far as citizens or residents of the United States are concerned, there is now no withholding or payment of tax at the source, except in the case of tax-free covenant bonds. After the enactment of the 1913 law many bonds were issued which contained tax-free covenants whereby the debtor corporations agreed to pay interest in full without deducting the amount of tax required to be withheld at the source. Bonds having such covenants commanded a somewhat higher price than they otherwise would. Those who had purchased bonds with this privilege were naturally opposed to any modification of the law which would abolish it. To meet these objections the 1917, 1918, and 1921 laws provided for restricted withholding in the case of tax-free covenant bond interest.

LEGAL THEORY OF "DEDUCTION."—Confusion arises chiefly from the necessarily involved legal phraseology of tax-free covenants and the legal fiction of "deduction." The legal fiction is that a tax-free covenant requires the debtor corporation actually to deduct 2% from the amount of the coupon pay this sum to the government, and then pay the bondholder 98% of his coupon *plus* an additional 2%, if the corporation has agreed to reimburse him to that extent. In practice the corporation pays the coupon in full and in

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[85] C. B. 3, p. 313; O. D. 674.

[86] This is variously called "collection at the source," "deduction at the source," "withholding at the source," and "stoppage at the source." Collection at the source was early instituted in British income tax administration to prevent evasion of the law. In the 1920 Report of the Royal Commission on the Income Tax, the opinion was emphatically expressed that retention of deduction at the source is necessary to the efficient administration of the revenue. At least 70% of the present British income tax is collected at the source. The Commission also concluded: "We are not satisfied that any system of 'information at the source' would be a practical and efficient substitute for the present system, and it would be a source of trouble and irritation to the community in general."

[87] This term should not be confused with "tax-exempt," which means freedom from taxation—state, local or federal, or all three.

addition pays on behalf of the bondholder to the government a tax equivalent to 2% of the amount of the coupon.

Under some tax-free covenants debtor corporation agrees to reimburse bondholder only up to 1% of amount of coupon. The theory is that 2% is deducted from the coupon and the bondholder is paid 98% of the coupon *plus* a reimbursement of 1%. Practically, bondholder gets 99% of his coupon and corporation pays 2% to the government for him.

LIMITATION OF THE DEBTOR CORPORATION'S LIABILITY.—The usual tax-free covenant obligates the corporation to pay only such normal tax as it is required by law to **deduct and retain** for account of bondholders. Sometimes the covenant is to pay only up to a sum which is less than it is required to deduct and retain (e.g., 1%, while the deduction now required is 2%). If withholding at the source were to be entirely abolished the corporation would not be required by such a covenant to pay any normal tax for the bondholder.

Since the imposition of a high normal tax there has been a tendency to state the actual percentage of tax for which the corporation will make reimbursement. Among such provisions are: "Both principal and interest payable in full without deduction for any federal normal income tax . . . . not in excess of 2 per cent" and "both principal and interest payable in full without deduction for any federal normal income tax . . . . up to 4 per cent." The first clause limits the present and future liabiliy to reimburse to 2 %. The second clause limits such future liability to 4%. Thus if under a future law 6% were the lawful deduction, reimbursement would be made to the extent of 2% under the first clause or 4% under the second. This 4% limitation should not be construed to render corporations liable to 4% under the present law, because 2% is the maximum lawful deduction in case of a bond containing a tax-free covenant clause.

WHAT IS A "TAX-FREE COVENANT?"[88]—The law defines a tax-free covenant as follows:

Law. Sec. 221.[89] . . . . (b) In any case where bonds, mortgages, or deeds of trust, or other similar obligations of a corporation contain a contract or provision by which the obligor agrees to pay any portion of the tax imposed by this title upon the obligee, or to reimburse the obligee for any portion of the tax, or to pay the interest without deduction for any tax which the obligor may be required or permitted to pay thereon, or to retain therefrom under any law of the United States. . . . .

By Treasury interpretation, bonds issued under a trust deed containing a tax-free covenant are treated as if they themselves contained such a covenant. It is also held:

Ruling. Where neither bonds nor the trust deeds given by the obligor to secure them contain a tax-free convenant, supplemental agreements executed by the obligor corporation and the trustee containing a tax-free covenant and which modify the original trust deeds to that extent are of the same effect from the date of their proper execution as if they had been part of the original deeds of trust, and the bonds from such date are subject to the provisions of section 221(b) of the Revenue Act of 1918, provided proper authority exists for the modification of the trust deeds in this manner. The authority must be contained in the original trust deeds or actually secured from the bondholders. (C. B. 2, p. 187; O. D. 1414.)

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[88] Tax-free covenants are frequently not limited to federal taxes, but include any state, county, or local taxes or impositions which the obligor may be required or permitted to deduct or retain under present or future laws.

[89] Subsec. (a) refers only to non-resident alien individuals or partnerships.

AMOUNT OF TAX WITHHELD BY OBLIGOR CORPORATION.—

Law. Sec. 221. . . . . (b) . . . . the obligor shall deduct and withhold a tax equal to 2 per centum of the interest upon such bonds, mortgages, deeds of trust, or other obligations, whether such interest is payable annually or at shorter or longer periods. . . . .

FROM WHOM TAX IS WITHHELD.—The law provides that in making payments of interest on tax-free covenant bonds, the obligor shall deduct and withhold a tax equivalent to 2% of the coupon.

Law. Sec. 221. . . . . (b) . . . . whether payable to a nonresident alien individual or to an individual citizen or resident of the United States or to a partnership: *Provided*, That the Commissioner may authorize such tax to be deducted and withheld in the case of interest upon any such bonds, mortgages, deeds of trust, or other obligations, the owners of which are not known to the withholding agent. . . . .

Sec. 237. That in the case of foreign corporations subject to taxation under this title not engaged in trade or business within the United States and not having any office or place of business therein, there shall be deducted and withheld at the source in the same manner and upon the same items of income as is provided in section 221 a tax equal to 12½ per centum thereof (but during the calendar year 1921 only 10 per centum), and such tax shall be returned and paid in the same manner and subject to the same conditions as provided in that section: *Provided*, That in the case of interest described in subdivision (b) of that section the deduction and withholding shall be at the rate of 2 per centum.

Regulation. In general, withholding is required (*a*) of a tax of 8 per cent in the case of fixed or determinable annual or periodical income payable to a nonresident alien individual or to a partnership composed in whole or in part of nonresident aliens and having no office or place of business within the United States, except (1) dividends of a class allowed as a credit by subdivision (*a*) of section 216, (2) interest on deposits with persons carrying on the banking business, paid to persons not engaged in business in the United States and not having an office or place of business therein, and (3) interest upon corporate bonds containing a tax-free covenant clause; (*b*) of a tax of 10 per cent for the calendar year 1921 and 12½ per cent for subsequent years in the case of fixed or determinable annual or periodical income (with the exceptions just stated) payable to a foreign corporation not engaged in trade or business within the United States and not having any office or place of business therein; and (*c*) of a tax of 2 per cent in the case of interest payable to an individual or a partnership, whether resident or nonresident, or to a foreign corporation not engaged in trade or business within the United States and not having any office or place of business therein, upon bonds or other obligations of domestic or resident foreign corporations containing a so-called tax-free covenant clause. Where the owner of bonds or other like obligations is unknown to the withholding agent a tax of 2 per cent must be withheld from interest on so-called tax-free covenant bonds, and a tax of 8 per cent must be withheld from interest on all other corporate bonds or securities. Bonds issued under a trust deed containing a tax-free covenant are treated as if they contained such a covenant. A foreign corporation having a fiscal agent or paying agent in this country is required to withhold a tax of 2 per cent upon the interest on its tax-free covenant bonds. . . . .

A debtor corporation having an issue of bonds or other similar obligations may appoint a duly authorized withholding agent to act in its behalf, provided notice of such appointment is filed with the Commissioner. (Art. 361.)

"WITHHOLDING AGENT" DEFINED.—

Law. Sec. 200. . . . . (3) The term "withholding agent" means any person required to deduct and withhold any tax under the provisions of section 221 or section 237; . . . .

INCOME SUBJECT TO WITHHOLDING.—

Regulation. Only (*a*) fixed or determinable (*b*) annual or periodical income is subject to withholding. Among such income, giving an idea of the general character of income intended, the statute specifies interest, rent, salaries, wages, premiums, annuities, compensations, remunerations, and emoluments. But other kinds of income may be included. . . . . (Art. 362.)

Fixed Income Defined.—

Regulation. . . . . Income is fixed when it is to be paid in amounts definitely predetermined. . . . . (Art. 362.)

Determinable Income Defined.—

Regulation. . . . . On the other hand, it is determinable whenever there is a basis of calculation by which the amount to be paid may be ascertained. (*b*) The income need not be paid annually if it is paid periodically, that is to say, from time to time, whether or not at regular intervals. That the length of time during which the payments are to be made may be increased or diminished in accordance with someone's will or with the happening of an event does not make the payments any the less determinable or periodical. A salesman working by the month for a commission on sales which is paid or credited monthly receives determinable periodical income. (Art. 362.)

EXEMPTION FROM WITHHOLDING.—Under the law debtor corporation or its paying agent is required to withhold a tax of 2% on tax-free covenant bond interest paid to individual citizens or residents **who do not claim exemption,** and in the case of resident partnerships.[90]

The statute provides that exemption from withholding may be claimed in the following manner:

Law. Sec. 221. . . . . (b) . . . . Such deduction and withholding shall not be required in the case of a citizen or resident entitled to receive such interest, if he files with the withholding agent on or before February 1 a signed notice in writing claiming the benefit of the credits provided in subdivisions (c) and (d) of section 216; nor in the case of a nonresident alien individual if so provided for in regulations prescribed[91] by the Commissioner under subdivision (g), section 217.

Regulation. Withholding from interest on bonds or other obligations containing a tax-free covenant shall not be required in the case of a citizen or resident alien individual if he files with the withholding agent when presenting interest coupons for payment, or not later than February 1 following the taxable year, an ownership certificate on Form 1001 claiming a personal exemption or credit for dependents. . . . . (Art. 363.)

If exemption is claimed on coupons, taxpayer thereby merely serves notice on debtor corporation that his income is too small to be subject to tax and therefore nothing should be paid to the government on his behalf. If exemption is not claimed, a tax of 2% of the amount of the coupon is paid to the government by the obligor.

Who Should Claim Exemption from Withholding?—Individual citizens or residents are privileged to claim exemption from withholding, but partners may not claim such exemption. A resident alien is required, in claiming such exemption, to file in addition a certificate of residence (Form 1078 revised) with withholding agent.

Individual citizens or residents should claim exemption, if total amount of net taxable income does not exceed their personal exemptions, i.e., $1,000 for a single person, $2,000 or $2,500 for a married person, plus $400 for each dependent. By filing such claim the individual relieves debtor corporation from paying a tax not lawfully due.

Debtor corporation's liability under a tax-free covenant covers only the portion of **normal tax** deductible at source. If, therefore, a taxpayer is **subject only to surtax,** because his lawful deductions exceed the amount of income, if any, subject to normal tax, he should relieve the debtor corporation from making payment to the government in his behalf by filing a claim for exemption in collecting tax-free covenant bond interest.

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[90] For withholding on account of non-resident alien individuals, foreign partnership and corporations, see Montgomery's Income Tax Procedure, 1923, Ch. XLI.

[91] Sec. 217 gives the Commissioner discretion in allowing non-resident alien individuals to claim exemption by means of certificates of ownership.

If an individual who has not claimed exemption at time of collecting the interest afterwards desires to claim exemption, he may file in writing with paying agent, at any time prior to Feb. 1 of succeeding year, notice claiming exemption. Form 1001 may be used.

An individual who has claimed exemption and subsequently desires not to claim exemption must file notice in writing (Form 1000) with paying agent on or before Feb. 1.

Ruling. A foreign organization which has established its exemption from the payment of income tax in accordance with the provisions of article 511 of Regulations 62 will be permitted to claim exemption from having any tax withheld at the source upon interest payments made on bonds belonging to it. Ownership certificate, Form 1000, revised, is the proper form to be filed with such interest payments, but a notation should be made on the certificate substantially as follows: "As this organization has been declared exempt from the payment of income tax by the Commissioner of Internal Revenue under date of —— the interest entered on this certificate is not subject to withholding," giving the date of the official letter in which the organization was held to be exempt. (I–30–430; I. T. 1399.)

NO WITHHOLDING AGAINST DOMESTIC AND RESIDENT FOREIGN CORPORATIONS.—The law does not require withholding from interest on tax-free covenant bonds paid to a domestic corporation or to a foreign corporation having an office or place of business in the United States and engaged in a trade or business therein.[92]

As a rule, in case of payments of tax-free covenant bond interest to domestic or resident corporations,[93] no payment is made to the government on their behalf; hence the tax-free covenant is of no value to such holders. This feature of the law makes the tax-free covenant less costly to the issuing corporation, since large blocks of bonds are sold to banks, insurance companies, and other corporations.

WITHHOLDING OBLIGATION ON BOND INTEREST PAID IN YEARS AFTER INTEREST BECAME DUE.—

Ruling. . . . . Bond interest represents income to taxpayer when due and payable in accordance with article 54, Regulations 45. No tax required to be withheld from interest upon bonds due prior to March 1, 1913, but paid subsequent to that date. Interest due on and after March 1, 1913, subject to withholding at rates in force at time of payment but in case excess tax is withheld and paid to government claim for refund on form 46[94] will be considered. (Telegram to A. Iselin & Co., New York, N. Y., signed by P. S. Talbert, Acting Assistant to the Commissioner, and dated Sept. 8, 1919.)

From above it appears that no withholding is necessary by a debtor corporation in case of coupons from bonds containing a tax-free covenant clause now presented but due prior to Mar. 1, 1913; but on any coupons maturing subsequent to that date, withholding must be made at rate in existence at time of payment. Date of maturity does not determine rate of withholding. If an excessive tax is withheld and paid, bondholder may secure relief by filing claim for refund.

WITHHOLDING AT SOURCE OF INTEREST ON BONDS HAVING NO TAX-FREE COVENANT.—The government has taken the position that corporations whose securities do not contain a tax-free covenant must not pay the tax except under supplemental agreements.

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[92] Forms 1086 should be retained by a debtor corporation in order that it may have in its possession competent evidence in case it should seek to account for its failure to withhold from the income of a foreign corporation. (Letter to Prentice-Hall, Inc., signed by E. H. Batson, dated June 7, 1922.)

[93] Excepting personal service corporations during years 1918 to 1921, inclusive.

[94] Now Form 843.

Ruling. Your telegram May 29. Bonds without tax-free covenant not permitted to be considered tax-free bonds at option of issuing corporation. Corporation only allowed to withhold tax at rate of 8 and 10 per cent from non-resident alien individuals and non-resident alien corporations respectively. Corporation prohibited from paying tax on interest derived from such bonds when owned by citizens or residents of United States. (Telegram to the Farmers' Loan & Trust Co., New York, N. Y., signed by Commissioner Daniel C. Roper, and dated June 2, 1919.)

WITHHOLDING IN CASE OF PARTNERSHIPS HAVING NON-RESIDENT ALIEN MEMBERS.—

Regulation. The Revenue Act of 1921 provides for withholding in the case of payments made to a partnership composed in whole or in part of nonresident aliens. This provision does not apply to such payments made prior to November 23, 1921. However, in the case of a partnership having an office or place of business in the United States, withholding will not be required (except in the case of interest upon tax-free bonds) even though one or more of the members thereof is a nonresident alien; the partnership, however, as agent of the nonresident alien member or members, should file a return of the income of such nonresident alien member or members in accordance with the provisions of article 404. [Art. 371 (a).]

NO WITHHOLDING ON INTEREST PAID ON FOREIGN LOANS NOT EVIDENCED BY BONDS OR NOTES. Foreign partnerships and corporations are taxable only upon so much of their income as is derived from sources within the United States, determined under provisions of Sec. 217 of the law. Sec. 217 (a) lists specific items of income as income from sources **within** the United States, and among others includes "(1) Interest on bonds, notes or other interest-bearing obligations of residents, corporate or otherwise." Sec. 217 (c) lists specific items of income as income from sources **without** the United States—among other "interest other than that derived from sources within the United States as provided in paragraph (1) of subdivision (a)."

Where a citizen or resident of the United States has borrowed money from a foreign partnership or corporation, but such borrowing is evidenced only by book entries, and no bond, note, or other interest-bearing obligation has been given therefor, it is the opinion of some authorities that interest paid or credited thereon is not income from sources within the United States as defined by the law, and is not subject to taxation or withholding.

RETURNS OF WITHHOLDING.—

Law. Sec. 221. . . . . (c) Every individual, corporation, or partnership required to deduct and withhold any tax under this section shall make return thereof on or before March 1 of each year and shall on or before June 15 pay the tax to the official of the United States government authorized to receive it. . . . .

WITHHOLDING AGENTS LIABLE FOR DEDUCTIBLE TAXES.—

Law. Sec. 221. . . . . (c) . . . . Every such individual, corporation, or partnership is hereby made liable for such tax and is hereby indemnified against the claims and demands of any individual, corporation, or partnership for the amount of any payments made in accordance with the provisions of this section. . . . .

When No Liability of Withholding Agent for Collecting of Tax at Source.—

Law. Sec. 221. . . . . (e) If any tax required under this section to be deducted and withheld is paid by the recipient of the income, it shall not be recollected from the withholding agent; nor in cases in which the tax is so paid shall any penalty be imposed upon or collected from the recipient of the income or the withholding agent for failure to return or pay the same, unless such failure was fraudulent and for the purpose of evading payment.

MONTHLY AND ANNUAL RETURNS REQUIRED.—Withholding agent is required to make monthly and annual returns as follows:

Regulation. (*a*) Every withholding agent shall make an annual return to the collector of the tax withheld from interest on corporate bonds or other obligations on or before March 1 on Form 1013. He shall also make a monthly return on Form 1012 on or before the 20th day of the month following that for which the return is made. The original ownership certificates, or the substitute certificates where authorized, must be forwarded to the Commissioner with the monthly return . . . . the tax withheld must be paid on or before June 15 of each year to the collector. . . . . (Art. 371.)

Ownership certificates are now to be sent to the Commissioner, not to the collector as previously.

If a non-resident alien claims exemption on tax-free covenant bonds on or before Feb. 1 by filing with withholding agent Form 1001B, amount of tax due from withholding agent as shown by Form 1013 may be reduced by 2% of aggregate amount of interest payments made to such individual during calendar year.

When Forms 1001 and 1001A are used **there is no actual withholding,** such returns being simply **information returns.** Monthly and annual returns are nevertheless required.

Regulation. Where a debtor corporation or its duly authorized withholding agent has made payments of interest on its bonds, but in certain instances has been required to withhold no tax, the ownership certificates on Form 1001 filed in connection with such payments shall be transmitted to the Commissioner, accompanied by a return on form 1096A showing the number of ownership certificates thus transmitted and the total amount of interest paid. This return shall be made by the 20th day of each month following that for which the return is made and need not be sworn to. An annual return shall be forwarded to the Commissioner not later than March 15 of each year on form 1096B, on which shall be given a summary of the monthly returns. . . . . (Art. 373.)

TAX PAID ON TAX-FREE COVENANT BOND INTEREST, WHEN CONSIDERED INCOME.[95]—The Treasury Department, in 1919, ruled that any tax paid pursuant to a tax-free covenant clause on behalf of a taxpayer should be considered as additional interest and should be reported by taxpayer in his return. The 1921 law, under Sec. 234 (a-3), provides that taxes paid under tax-free covenants shall not be included in gross income of taxpayer.

Not Deductible by Corporation.[96] —Under Sec. 234 (a-3), debtor corporation is not allowed to make deduction for federal taxes so paid under heading of either interest or taxes.

Credit for Taxes Paid on Tax-Free Covenant Bond Interest. —Taxpayers may credit total normal and surtaxes with amount of any tax paid for them at source by a debtor corporation pursuant to a tax-free covenant clause.[97]

[95] For discussion, see Montgomery's Income Tax Procedure, 1923, Ch. XXIV.
[96] For discussion, see preceding reference.
[97] Sec. 221 (d).

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